

Search history

Valenrod.10/732812

09/05/2006

=> d his full

(FILE 'HOME' ENTERED AT 15:25:08 ON 05 SEP 2006)

FILE 'HCAPLUS' ENTERED AT 15:25:23 ON 05 SEP 2006

L1 1 SEA ABB=ON PLU=ON US2003-732812/APPS
D SCA
SEL RN

FILE 'REGISTRY' ENTERED AT 15:25:48 ON 05 SEP 2006

L2 16 SEA ABB=ON PLU=ON (101409-18-1/BI OR 106636-91-3/BI OR
180590-61-8/BI OR 18082-97-8/BI OR 18586-39-5/BI OR 4145-77-1/B
I OR 52090-23-0/BI OR 719300-31-9/BI OR 719300-32-0/BI OR
719300-33-1/BI OR 719300-34-2/BI OR 719300-35-3/BI OR 7440-21-3
/BI OR 7440-50-8/BI OR 7631-86-9/BI OR 88000-44-6/BI)
D SCA

FILE 'STNGUIDE' ENTERED AT 15:27:41 ON 05 SEP 2006

FILE 'REGISTRY' ENTERED AT 15:40:23 ON 05 SEP 2006

L3 STRUCTURE UPLOADED
L4 50 SEA SSS SAM L3
D STAT QUE L4
L5 1205 SEA SSS FUL L3
SAVE TEMP L5 VAL812STRA/A

FILE 'HCAPLUS' ENTERED AT 15:42:52 ON 05 SEP 2006

L6 875 SEA ABB=ON PLU=ON L5
L7 899826 SEA ABB=ON PLU=ON COPPER/BI
L8 3025 SEA ABB=ON PLU=ON UNDERCOAT/OBI OR UNDER COAT/OBI
L9 5861 SEA ABB=ON PLU=ON (UNDERCOAT OR UNDER COAT)/BI
L10 1247390 SEA ABB=ON PLU=ON FILM?/BI
L11 28 SEA ABB=ON PLU=ON L6 AND L7
L12 15 SEA ABB=ON PLU=ON (L8 OR L9 OR L10) AND L6
L13 40 SEA ABB=ON PLU=ON (L11 OR L12)
L14 1118128 SEA ABB=ON PLU=ON SUBSTRAT?/BI
L15 38 SEA ABB=ON PLU=ON L6 AND L14
L16 71 SEA ABB=ON PLU=ON L13 OR L15

FILE 'REGISTRY' ENTERED AT 15:47:12 ON 05 SEP 2006

L17 13 SEA ABB=ON PLU=ON L2 AND L5

FILE 'HCAPLUS' ENTERED AT 15:47:29 ON 05 SEP 2006

L18 149 SEA ABB=ON PLU=ON L17

FILE 'STNGUIDE' ENTERED AT 15:48:00 ON 05 SEP 2006

FILE 'HCAPLUS' ENTERED AT 15:48:32 ON 05 SEP 2006
D IALL L1

FILE 'STNGUIDE' ENTERED AT 15:49:57 ON 05 SEP 2006

FILE 'REGISTRY' ENTERED AT 15:50:55 ON 05 SEP 2006
D SCA L17

FILE 'STNGUIDE' ENTERED AT 15:56:28 ON 05 SEP 2006

FILE 'HCAPLUS' ENTERED AT 15:57:48 ON 05 SEP 2006

L19 576565 SEA ABB=ON PLU=ON (SEMICONDUCTOR# OR SEMI CONDUCTOR#)/BI
L20 2614182 SEA ABB=ON PLU=ON (73 OR 76)/SC,CC,SX

L21 20 SEA ABB=ON PLU=ON L6 AND L20
L22 QUE ABB=ON PLU=ON 76/SC,CC,SX
L23 8 SEA ABB=ON PLU=ON L6 AND L22
L24 7 SEA ABB=ON PLU=ON L19 AND L6
D SCA
L25 131 SEA ABB=ON PLU=ON L18 AND PY<2003
L26 127 SEA ABB=ON PLU=ON L18 AND PY<2002

FILE 'STNGUIDE' ENTERED AT 16:06:36 ON 05 SEP 2006

FILE 'HCAPLUS' ENTERED AT 16:06:47 ON 05 SEP 2006
L27 12 SEA ABB=ON PLU=ON L21 NOT ((L23 OR L24))
L28 QUE ABB=ON PLU=ON VAPOR DEPOSIT?/BI
L29 2 SEA ABB=ON PLU=ON L6 AND L28
D SCA

FILE 'STNGUIDE' ENTERED AT 16:10:44 ON 05 SEP 2006

FILE 'REGISTRY' ENTERED AT 16:13:06 ON 05 SEP 2006
L30 STRUCTURE UPLOADED
L31 14 SEA SUB=L5 SSS SAM L30
L32 237 SEA SUB=L5 SSS FUL L30

FILE 'HCAPLUS' ENTERED AT 16:14:40 ON 05 SEP 2006
L33 345 SEA ABB=ON PLU=ON L32
L34 87 SEA ABB=ON PLU=ON L18 AND PY<1995
L35 74 SEA ABB=ON PLU=ON L18 AND PY<1990
L36 49 SEA ABB=ON PLU=ON L18 AND PY<1985
L37 26 SEA ABB=ON PLU=ON L18 AND PY<1980
L38 13 SEA ABB=ON PLU=ON HIDEAKI M?/AU
L39 1041 SEA ABB=ON PLU=ON MACHIDA H?/AU
E MACHIDA H/AU
L40 112 SEA ABB=ON PLU=ON MACHIDA HIDEAKI/AU
L41 23 SEA ABB=ON PLU=ON L40 AND SILICON/OBI
L42 16 SEA ABB=ON PLU=ON L40 AND COPPER/OBI
L43 0 SEA ABB=ON PLU=ON L38 AND SILICO/OBI
L44 1 SEA ABB=ON PLU=ON L38 AND SILICON/OBI
L45 2 SEA ABB=ON PLU=ON L38 AND COPPER/OBI
L46 95 SEA ABB=ON PLU=ON (L39 OR L40) AND L28
L47 74 SEA ABB=ON PLU=ON L46 AND FILM?/OBI
L48 21 SEA ABB=ON PLU=ON L46 AND FILM?/OBI AND SILICON/OBI
L49 9 SEA ABB=ON PLU=ON L46 AND FILM?/OBI AND COPPER/OBI
L50 28 SEA ABB=ON PLU=ON (L48 OR L49)
L51 95 SEA ABB=ON PLU=ON L39 AND L28
L52 21 SEA ABB=ON PLU=ON L39 AND L28 AND FILM?/OBI AND SILICON/OBI
L53 9 SEA ABB=ON PLU=ON L39 AND L28 AND FILM?/OBI AND COPPER/OBI
L54 1 SEA ABB=ON PLU=ON L39 AND L28 AND FILM?/OBI AND PHOSPHO?/OBI

FILE 'REGISTRY' ENTERED AT 16:25:44 ON 05 SEP 2006

FILE 'HCAPLUS' ENTERED AT 16:25:48 ON 05 SEP 2006
L55 1 SEA ABB=ON PLU=ON (L48 OR L49 OR L52 OR L53 OR L54) AND (L11
OR L23 OR L24 OR L12 OR L29 OR L37)

FILE 'STNGUIDE' ENTERED AT 16:26:54 ON 05 SEP 2006

FILE 'REGISTRY' ENTERED AT 16:28:35 ON 05 SEP 2006

FILE 'HCAPLUS' ENTERED AT 16:28:36 ON 05 SEP 2006

D STAT QUE L48
D STAT QUE L49
D STAT QUE L52
D STAT QUE L53
D STAT QUE L54
D STAT QUE L55
L56 28 SEA ABB=ON PLU=ON L48 OR L49 OR L52 OR L53 OR L54 OR L55
D IBIB ABS HITIND HITSTR L56 1-28

FILE 'STNGUIDE' ENTERED AT 16:29:44 ON 05 SEP 2006

FILE 'REGISTRY' ENTERED AT 16:30:40 ON 05 SEP 2006

FILE 'HCAPLUS' ENTERED AT 16:30:41 ON 05 SEP 2006
D STAT QUE L37
L57 26 SEA ABB=ON PLU=ON L37 NOT L56
D IBIB ABS HITIND HITSTR L57 1-26

FILE 'STNGUIDE' ENTERED AT 16:34:20 ON 05 SEP 2006

FILE 'REGISTRY' ENTERED AT 16:35:48 ON 05 SEP 2006

FILE 'HCAPLUS' ENTERED AT 16:35:49 ON 05 SEP 2006
D STAT QUE L11
D STAT QUE L12
D STAT QUE L23
D STAT QUE L24
D STAT QUE L29
L58 43 SEA ABB=ON PLU=ON (L11 OR L12 OR L23 OR L24 OR L29) NOT (L56
OR L57)
D IBIB ABS HITIND HITSTR L58 1-43

FILE HOME

FILE HCAPLUS

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FILE LAST UPDATED: 4 Sep 2006 (20060904/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE REGISTRY

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 4 SEP 2006 HIGHEST RN 905816-92-4

DICTIONARY FILE UPDATES: 4 SEP 2006 HIGHEST RN 905816-92-4

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conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document. For information
on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/regprops.html>

FILE STNGUIDE

FILE CONTAINS CURRENT INFORMATION.

LAST RELOADED: Sep 1, 2006 (20060901/UP).

=>

=> file registry

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STRUCTURE FILE UPDATES: 4 SEP 2006 HIGHEST RN 905816-92-4
DICTIONARY FILE UPDATES: 4 SEP 2006 HIGHEST RN 905816-92-4

AUTHOR
SEARCH

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TSCA INFORMATION NOW CURRENT THROUGH June 30, 2006

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document. For information
on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/regprops.html>

=> file hcaplus

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FILE COVERS 1907 - 5 Sep 2006 VOL 145 ISS 11
FILE LAST UPDATED: 4 Sep 2006 (20060904/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate
substance identification.

'OBI' IS DEFAULT SEARCH FIELD FOR 'HCAPLUS' FILE

=> d stat que L48

L28 QUE ABB=ON PLU=ON VAPOR DEPOSIT?/BI
L39 1041 SEA FILE=HCAPLUS ABB=ON PLU=ON MACHIDA H?/AU
L40 112 SEA FILE=HCAPLUS ABB=ON PLU=ON MACHIDA HIDEAKI/AU
L46 95 SEA FILE=HCAPLUS ABB=ON PLU=ON (L39 OR L40) AND L28
L48 21 SEA FILE=HCAPLUS ABB=ON PLU=ON L46 AND FILM?/OBI AND

SILICON/OBI

=> d stat que L49

```
L28      QUE ABB=ON PLU=ON VAPOR DEPOSIT?/BI
L39      1041 SEA FILE=HCAPLUS ABB=ON PLU=ON MACHIDA H?/AU
L40      112 SEA FILE=HCAPLUS ABB=ON PLU=ON MACHIDA HIDEAKI/AU
L46      95 SEA FILE=HCAPLUS ABB=ON PLU=ON (L39 OR L40) AND L28
L49      9 SEA FILE=HCAPLUS ABB=ON PLU=ON L46 AND FILM?/OBI AND
          COPPER/OBI
```

=> d stat que L52

```
L28      QUE ABB=ON PLU=ON VAPOR DEPOSIT?/BI
L39      1041 SEA FILE=HCAPLUS ABB=ON PLU=ON MACHIDA H?/AU
L52      21 SEA FILE=HCAPLUS ABB=ON PLU=ON L39 AND L28 AND FILM?/OBI AND
          SILICON/OBI
```

=> d stat que L53

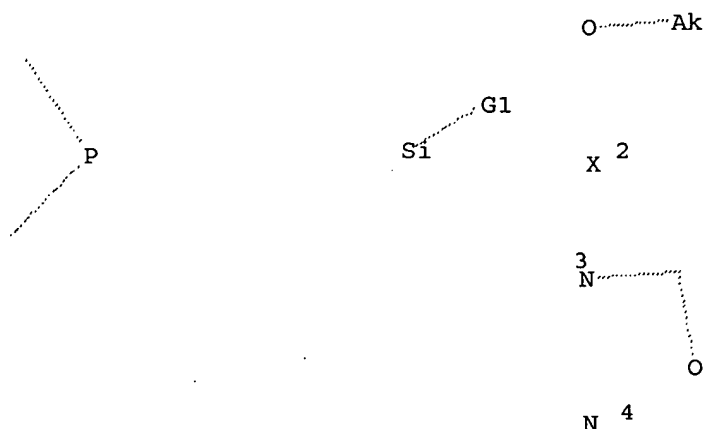
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L28      QUE ABB=ON PLU=ON VAPOR DEPOSIT?/BI
L39      1041 SEA FILE=HCAPLUS ABB=ON PLU=ON MACHIDA H?/AU
L53      9 SEA FILE=HCAPLUS ABB=ON PLU=ON L39 AND L28 AND FILM?/OBI AND
          COPPER/OBI
```

=> d stat que L54

```
L28      QUE ABB=ON PLU=ON VAPOR DEPOSIT?/BI
L39      1041 SEA FILE=HCAPLUS ABB=ON PLU=ON MACHIDA H?/AU
L54      1 SEA FILE=HCAPLUS ABB=ON PLU=ON L39 AND L28 AND FILM?/OBI AND
          PHOSPHO?/OBI
```

=> d stat que L55

```
L2      16 SEA FILE=REGISTRY ABB=ON PLU=ON (101409-18-1/BI OR 106636-91-
          3/BI OR 180590-61-8/BI OR 18082-97-8/BI OR 18586-39-5/BI OR
          4145-77-1/BI OR 52090-23-0/BI OR 719300-31-9/BI OR 719300-32-0/
          BI OR 719300-33-1/BI OR 719300-34-2/BI OR 719300-35-3/BI OR
          7440-21-3/BI OR 7440-50-8/BI OR 7631-86-9/BI OR 88000-44-6/BI)
L3      STR
```



G1 [@1], [@2], [@3], [@4]

Structure attributes must be viewed using STN Express query preparation.

L5	1205	SEA FILE=REGISTRY SSS FUL L3
L6	875	SEA FILE=HCAPLUS ABB=ON PLU=ON L5
L7	899826	SEA FILE=HCAPLUS ABB=ON PLU=ON COPPER/BI
L8	3025	SEA FILE=HCAPLUS ABB=ON PLU=ON UNDERCOAT/OBI OR UNDER COAT/OBI
L9	5861	SEA FILE=HCAPLUS ABB=ON PLU=ON (UNDERCOAT OR UNDER COAT)/BI
L10	1247390	SEA FILE=HCAPLUS ABB=ON PLU=ON FILM?/BI
L11	28	SEA FILE=HCAPLUS ABB=ON PLU=ON L6 AND L7
L12	15	SEA FILE=HCAPLUS ABB=ON PLU=ON (L8 OR L9 OR L10) AND L6
L17	13	SEA FILE=REGISTRY ABB=ON PLU=ON L2 AND L5
L18	149	SEA FILE=HCAPLUS ABB=ON PLU=ON L17
L19	576565	SEA FILE=HCAPLUS ABB=ON PLU=ON (SEMICONDUCTOR# OR SEMI CONDUCTOR#)/BI
L22		QUE ABB=ON PLU=ON 76/SC,CC,SX
L23	8	SEA FILE=HCAPLUS ABB=ON PLU=ON L6 AND L22
L24	7	SEA FILE=HCAPLUS ABB=ON PLU=ON L19 AND L6
L28		QUE ABB=ON PLU=ON VAPOR DEPOSIT?/BI
L29	2	SEA FILE=HCAPLUS ABB=ON PLU=ON L6 AND L28
L37	26	SEA FILE=HCAPLUS ABB=ON PLU=ON L18 AND PY<1980
L39	1041	SEA FILE=HCAPLUS ABB=ON PLU=ON MACHIDA H?/AU
L40	112	SEA FILE=HCAPLUS ABB=ON PLU=ON MACHIDA HIDEAKI/AU
L46	95	SEA FILE=HCAPLUS ABB=ON PLU=ON (L39 OR L40) AND L28
L48	21	SEA FILE=HCAPLUS ABB=ON PLU=ON L46 AND FILM?/OBI AND SILICON/OBI
L49	9	SEA FILE=HCAPLUS ABB=ON PLU=ON L46 AND FILM?/OBI AND COPPER/OBI
L52	21	SEA FILE=HCAPLUS ABB=ON PLU=ON L39 AND L28 AND FILM?/OBI AND SILICON/OBI
L53	9	SEA FILE=HCAPLUS ABB=ON PLU=ON L39 AND L28 AND FILM?/OBI AND COPPER/OBI
L54	1	SEA FILE=HCAPLUS ABB=ON PLU=ON L39 AND L28 AND FILM?/OBI AND PHOSPHO?/OBI
L55	1	SEA FILE=HCAPLUS ABB=ON PLU=ON (L48 OR L49 OR L52 OR L53 OR L54) AND (L11 OR L23 OR L24 OR L12 OR L29 OR L37)

=> s L48 or L49 or L52 or L53 or L54 or L55

L56 28 L48 OR L49 OR L52 OR L53 OR L54 OR L55

=> d ibib abs hitind hitstr L56 1-28

L56 ANSWER 1 OF 28 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2006:736351 HCAPLUS
DOCUMENT NUMBER: 145:178941
TITLE: Low-dielectric interlayer insulator materials and deposition process
INVENTOR(S): **Machida, Hideaki**; Muramoto, Ikuyo; Xu, Yonghua
PATENT ASSIGNEE(S): Tri Chemical Laboratory Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006196624	A2	20060727	JP 2005-5675	20050112
PRIORITY APPLN. INFO.:			JP 2005-5675	20050112
AB	The title CVD process for deposition of low-dielec. insulators involves (1) feeding (i-Pr) ₂ Si(OMe) ₂ and (2) decomposing (i-Pr) ₂ Si(OMe) ₂ to deposit an insulator film on a substrate.			
CC	76-10 (Electric Phenomena)			
ST	diisopropyldimethoxysilane CVD silicon oxycarbide hydride low dielec insulator			
IT	Vapor deposition process (low-dielec. interlayer insulator materials and deposition process)			
IT	18230-61-0, Diisopropyldimethoxysilane RL: RCT (Reactant); RACT (Reactant or reagent) (decomposition and deposition for CVD of dielec. film ; low-dielec. interlayer insulator materials and deposition process)			

L56 ANSWER 2 OF 28 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:318334 HCAPLUS
DOCUMENT NUMBER: 143:30158
TITLE: Ni thin **film** deposition from tetrakis(trifluorophosphine)-nickel
AUTHOR(S): Ohshita, Yoshio; Ishikawa, Masato; Kada, Takeshi;
Machida, Hideaki; Ogura, Atsushi
CORPORATE SOURCE: Toyota Technological Institute, Nagoya, 468-8511, Japan
SOURCE: Japanese Journal of Applied Physics, Part 2: Letters & Express Letters (2005), 44(8-11), L315-L317
CODEN: JAPLD8
PUBLISHER: Japan Society of Applied Physics
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The inorg. mol. Ni(PF₃)₄ is a candidate as a Ni chemical **vapor deposition** (CVD) precursor, which is an alternative to organometal sources. We develop a new method of synthesizing Ni(PF₃)₄ from Cp₂Ni and PF₃ with a high yield. Ni(PF₃)₄ is liquid at room temperature and has a vapor pressure (215 Torr at 30°) sufficiently high for CVD. CVD using MeCp₂Ni or CpAllyNi as a Ni precursor does not produce a Ni film on a Si surface, but CVD using the Ni(PF₃)₄/He gas system deposits a continuous Ni film on a Si surface at low temps. below 200°.
CC 56-6 (Nonferrous Metals and Alloys)

ST nickel film deposition tetrakis(trifluorophosphine) CVD
silicon substrate

IT Vapor deposition process
(chemical; effect of substrate temperature on deposition rate of Ni thin
film from tetrakis(trifluorophosphine)-nickel)

IT Films
(elec. conductive; effect of substrate temperature on deposition rate of Ni
thin film from tetrakis(trifluorophosphine)-nickel)

IT Electric conductors
(films; effect of substrate temperature on deposition rate of Ni
thin film from tetrakis(trifluorophosphine)-nickel)

IT 7440-02-0, Nickel, processes
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP
(Physical process); TEM (Technical or engineered material use); PROC
(Process); USES (Uses)
(effect of substrate temperature on deposition rate of Ni thin film
from tetrakis(trifluorophosphine)-nickel)

IT 13859-65-9, Tetrakis(trifluorophosphine)-nickel
RL: RCT (Reactant); RACT (Reactant or reagent)
(effect of substrate temperature on deposition rate of Ni thin film
from tetrakis(trifluorophosphine)-nickel)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L56 ANSWER 3 OF 28 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:238625 HCAPLUS

DOCUMENT NUMBER: 142:327446

TITLE: Film forming material, film
forming method, and silicide film

INVENTOR(S): Machida, Hideaki; Ohshita, Yoshio; Ishikawa,
Masato; Kada, Takeshi

PATENT ASSIGNEE(S): Tri Chemical Laboratories Inc., Japan

SOURCE: U.S. Pat. Appl. Publ., 7 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

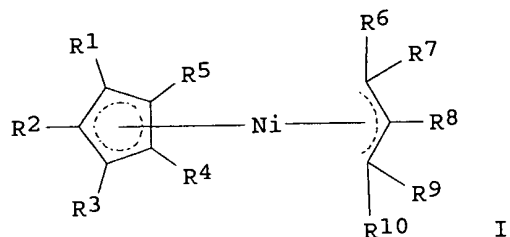
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005059243	A1	20050317	US 2004-895871	20040722
US 7045457	B2	20060516		
JP 2005093732	A2	20050407	JP 2003-325165	20030917
PRIORITY APPLN. INFO.:			JP 2003-325165	A 20030917
OTHER SOURCE(S):	MARPAT	142:327446		

GI



AB This invention describes a technique of forming nickel silicide films usable for next-generation transistors through a CVD process. A nickel source is one or more chemical compds. represented by [I where R1, R2, R3, R4, R5, R6, R7, R8, R9, or R10 is H or a hydrocarbon group].

IC ICM H01L021-44

INCL 438682000

CC 76-3 (Electric Phenomena)

ST nickel silicide film formation transistor CVD

IT **Vapor deposition process**
(chemical; film forming material and film forming method for nickel silicide film usable for transistors)

IT **Films**
(elec. conductive; film forming material and film forming method for nickel silicide film usable for transistors)

IT **Transistors**
(film forming material and film forming method for nickel silicide film usable for transistors)

IT **Electric conductors**
(films; film forming material and film forming method for nickel silicide film usable for transistors)

IT 12035-57-3, Nickel silicide
RL: FMU (Formation, unclassified); TEM (Technical or engineered material use); FORM (Formation, nonpreparative); USES (Uses)
(film forming material and film forming method for nickel silicide film usable for transistors)

IT 1590-87-0, Silicon hydride (Si₂H₆) 7783-26-8, Silicon hydride (Si₃H₈) 7803-62-5, Silicon hydride (SiH₄), processes 12107-46-9 67126-05-0 847986-64-5 847986-66-7 847986-67-8
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(precursors; film forming material and film forming method for nickel silicide film usable for transistors)

IT 1333-74-0, Hydrogen, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(reductant; film forming material and film forming method for nickel silicide film usable for transistors)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L56 ANSWER 4 OF 28 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:72981 HCAPLUS
DOCUMENT NUMBER: 142:167437
TITLE: Formation of dielectric films containing silicon, carbon, and nitrogen for

semiconductor devices at desired ratio with good reproducibility
 INVENTOR(S): Nakayama, Hiroshi; Machida, Hideaki; Shimoyama, Norio
 PATENT ASSIGNEE(S): Tri Chemical Laboratory Inc., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005026244	A2	20050127	JP 2003-186525	20030630
PRIORITY APPLN. INFO.:			JP 2003-186525	20030630
OTHER SOURCE(S): MARPAT 142:167437				

AB The films are formed on substrates by feeding aminosilicon vapors into reaction chambers equipped with heaters. Alternatively, the films having Si/C/N atomic ratio of 0.0000001-99.9999999/0.0000001-99.9999999/0.0000001-99.9999999 (total = 100) are formed on substrates by feeding aminosilicon vapors in reaction chambers equipped with heaters at $\geq 800^\circ$. Preferably, the films are formed by CVD. The films, useful for surface protective films, etching stopping layers, and ion stopping layers for semiconductor devices, show good adhesion to SiO dielec. films.

IC ICM H01L021-318
 ICS C23C016-36; C23C016-44

CC 76-3 (Electric Phenomena)
 Section cross-reference(s): 75

ST **silicon** carbide nitride dielec **film** CVD; aminosilicon CVD heater **silicon** carbide nitride **film**; etch stop **silicon** carbide nitride CVD; ion stopping **silicon** carbide nitride CVD; semiconductor device **silicon** carbide nitride CVD

IT Dielectric **films**
 Etch stops
 Semiconductor devices
 (chemical **vapor deposition** of dielec. **films** containing Si, C, and N for semiconductor devices by feeding aminosilicons into reaction chambers equipped with heaters)

IT **Vapor deposition** process
 (chemical; chemical **vapor deposition** of dielec. **films** containing Si, C, and N for semiconductor devices by feeding aminosilicons into reaction chambers equipped with heaters)

IT Transition metals, uses
 RL: DEV (Device component use); USES (Uses)
 (heaters; chemical **vapor deposition** of dielec. **films** containing Si, C, and N for semiconductor devices by feeding aminosilicons into reaction chambers equipped with heaters)

IT Heaters
 (transition metals; chemical **vapor deposition** of dielec. **films** containing Si, C, and N for semiconductor devices by feeding aminosilicons into reaction chambers equipped with heaters)

IT 64477-28-7P, **Silicon** carbide nitride
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (amorphous; chemical **vapor deposition** of dielec. **films** containing Si, C, and N for semiconductor devices by feeding aminosilicons into reaction chambers equipped with heaters)

- IT 1624-01-7, Tetrakis(dimethylamino)silane 2875-98-1, Dimethylaminosilane
 4693-04-3, Bis(dimethylamino)silane 15112-89-7,
 Tris(dimethylamino)silane
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical
 process); PROC (Process)
 (chemical **vapor deposition** of dielec. films
 containing Si, C, and N for semiconductor devices by feeding aminosilicons
 into reaction chambers equipped with heaters)
- IT 1333-74-0, Hydrogen, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (diluent gas; chemical **vapor deposition** of dielec.
 films containing Si, C, and N for semiconductor devices by feeding
 aminosilicons into reaction chambers equipped with heaters)
- IT 7440-25-7, Tantalum, uses 7440-33-7, Tungsten, uses
 RL: DEV (Device component use); USES (Uses)
 (heater in reaction chamber; chemical **vapor deposition**
 of dielec. films containing Si, C, and N for semiconductor
 devices by feeding aminosilicons into reaction chambers equipped with
 heaters)

L56 ANSWER 5 OF 28 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:1920 HCAPLUS
 DOCUMENT NUMBER: 142:104395
 TITLE: Material for forming **copper
 undercoat films**
 INVENTOR(S): **Machida, Hideaki**
 PATENT ASSIGNEE(S): Japan
 SOURCE: U.S. Pat. Appl. Publ., 6 pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004265600	A1	20041230	US 2003-732812	20031211
			US 2003-732812	20031211

PRIORITY APPLN. INFO.:

AB An **undercoat film** that prevents Cu diffusion and has
 excellent Cu conductor **film** binding, even when thin. A material
 for forming a Cu **undercoat film**, characterized by a
 compound represented by the general formula: (R1R2)P-(R)n-Si(X1X2X3),
 wherein at least one of X1, X2 and X3 is a hydrolytic group, R1 and R2 are
 alkyl groups, R denotes a chain-form organic group formed from alkyl groups,
 aromatic rings or alkyl groups containing aromatic rings, and n is an integer
 from 1
 to 6.

IC ICM B32B009-04

INCL 428447000

CC 76-2 (Electric Phenomena)

Section cross-reference(s): 48

ST **copper** undercoating **phosphoalkylsilane**
semiconductor device fabrication

IT Silanes

RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical,
 engineering or chemical process); PROC (Process); USES (Uses)
 (alkylphospho-; **phosphoalkylsilanes** for forming
copper undercoatings in **semiconductor** device
 fabrication)

IT **Vapor deposition** process

(chemical; phosphoalkylsilanes for forming copper undercoatings in semiconductor device fabrication)

IT Diffusion barrier
Electric contacts
Gate contacts
Interconnections, electric
Semiconductor device fabrication
(phosphoalkylsilanes for forming copper undercoatings in semiconductor device fabrication)

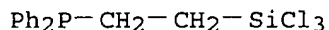
IT 4145-77-1 18082-97-8 18586-39-5
52090-23-0 88000-44-6 101409-18-1
106636-91-3 180590-61-8 719300-31-9
719300-32-0 719300-33-1 719300-34-2
719300-35-3
RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(barrier; phosphoalkylsilanes for forming copper undercoatings in semiconductor device fabrication)

IT 7440-50-8, Copper, processes
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(phosphoalkylsilanes for forming copper undercoatings in semiconductor device fabrication)

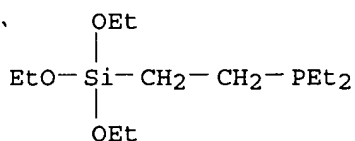
IT 7440-21-3, Silicon, processes 7631-86-9, Silica, processes
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(phosphoalkylsilanes for forming copper undercoatings in semiconductor device fabrication)

IT 4145-77-1 18082-97-8 18586-39-5
52090-23-0 88000-44-6 101409-18-1
106636-91-3 180590-61-8 719300-31-9
719300-32-0 719300-33-1 719300-34-2
719300-35-3
RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(barrier; phosphoalkylsilanes for forming copper undercoatings in semiconductor device fabrication)

RN 4145-77-1 HCAPLUS
CN Phosphine, diphenyl[2-(trichlorosilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)

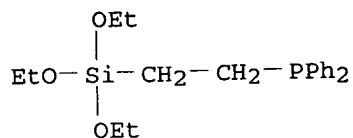


RN 18082-97-8 HCAPLUS
CN Phosphine, diethyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)

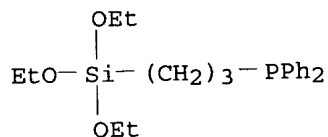


RN 18586-39-5 HCAPLUS
CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)

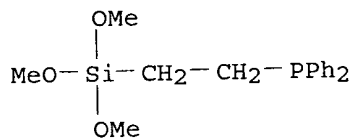
NAME)



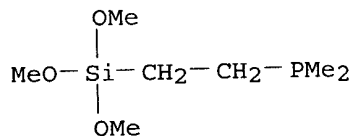
RN 52090-23-0 HCAPLUS
CN Phosphine, diphenyl[3-(triethoxysilyl)propyl]- (9CI) (CA INDEX NAME)



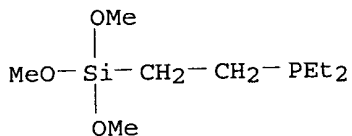
RN 88000-44-6 HCAPLUS
CN Phosphine, diphenyl[2-(trimethoxysilyl)ethyl]- (9CI) (CA INDEX NAME)



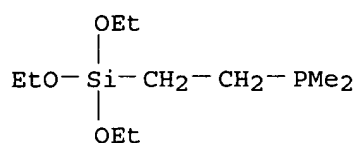
RN 101409-18-1 HCAPLUS
CN Phosphine, dimethyl[2-(trimethoxysilyl)ethyl]- (9CI) (CA INDEX NAME)



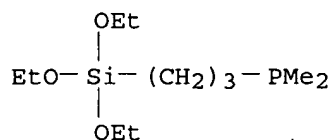
RN 106636-91-3 HCAPLUS
CN Phosphine, diethyl[2-(trimethoxysilyl)ethyl]- (9CI) (CA INDEX NAME)



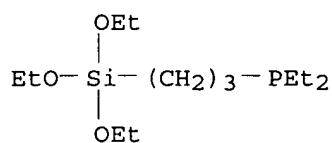
RN 180590-61-8 HCAPLUS
CN Phosphine, dimethyl[2-(triethoxysilyl)ethyl]- (9CI) (CA INDEX NAME)



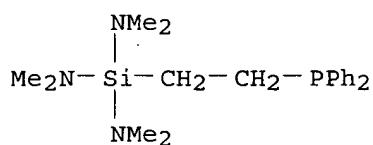
RN 719300-31-9 HCAPLUS
 CN Phosphine, dimethyl[3-(triethoxysilyl)propyl]- (9CI) (CA INDEX NAME)



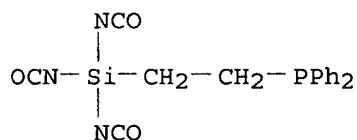
RN 719300-32-0 HCAPLUS
 CN Phosphine, diethyl[3-(triethoxysilyl)propyl]- (9CI) (CA INDEX NAME)



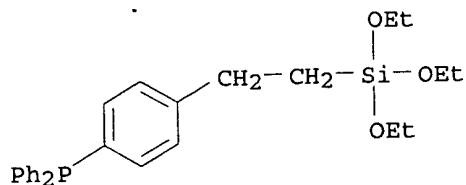
RN 719300-33-1 HCAPLUS
 CN Silanetriamine, 1-[2-(diphenylphosphino)ethyl]-N,N,N',N',N'',N'''-hexamethyl- (9CI) (CA INDEX NAME)



RN 719300-34-2 HCAPLUS
 CN Phosphine, diphenyl[2-(triisocyanatosilyl)ethyl]- (9CI) (CA INDEX NAME)



RN 719300-35-3 HCAPLUS
 CN Phosphine, diphenyl[4-[2-(triethoxysilyl)ethyl]phenyl]- (9CI) (CA INDEX NAME)



L56 ANSWER 6 OF 28 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:283794 HCAPLUS

DOCUMENT NUMBER: 141:418583

TITLE: CVD precursors for NiSi films

AUTHOR(S): Kada, T.; Ishikawa, M.; Machida, H.; Ogura, A.; Ohshita, Y.

CORPORATE SOURCE: Business Development Division, Tri Chemical Laboratories, Inc., Kitatsuru-gun, Yamanashi, 409-0112, Japan

SOURCE: Advanced Metallization Conference 2003, Proceedings of the Conference, Tokyo, Japan, Sept. 29-Oct. 1 and Montreal, QC, Canada, Oct. 21-23, 2003 (2004), Meeting Date 2003, 663-668. Editor(s): Ray, Gary W. Materials Research Society: Warrendale, Pa. CODEN: 69FFSR; ISBN: 1-55899-757-1

DOCUMENT TYPE: Conference

LANGUAGE: English

AB NiSi is an attractive material for the metal-gate electrodes or contacts of MOSFETs. On CVD, conformal or selective depositions are expected. However, a suitable Ni precursor for NiSi film was not studied yet. We therefore investigated the vapor pressure, thermal decomposition, and the deposition of Ni precursors with low m.p.s., bis(methylcyclopentadienyl)Ni (MeCp2Ni) and allyl(cyclopentadienyl)Ni (AllylCpNi). The vapor pressures of MeCp2Ni and AllylCpNi were high enough for CVD, resp. 1 and 10 Torr at 73°. Their thermal decompns. were also adequate for CVD precursors. Ni was deposited at 300°C by use of a MeCp2Ni/H2 gas mixture. Then Ni reacted with the Si substrate, and NiSi was formed. Adding Si3H8 to the mixture prevented the Si substrate from forming NiSi2 into the Si substrate. Residual C decreased with deposition temperature. Films could be deposited below the thermal decomposition temperature of MeCp2Ni.

Interactions with

H2, or the substrate surfaces were indicated. Films were deposited on a Si substrate faster than on SiO2 and vice versa. The surface affected the deposition rate. It was important to study the deposition conditions, especially the interactions, if pure NiSi films with flat surfaces are to be deposited.

CC 76-3 (Electric Phenomena)

Section cross-reference(s): 75

IT Vapor deposition process

(chemical; vapor pressure, thermal decomposition, and deposition behavior of CVD precursors for NiSi films)

IT Thermal decomposition

Vapor pressure

(vapor pressure, thermal decomposition, and deposition behavior of CVD precursors for NiSi films)

IT Microstructure

(vapor pressure, thermal decomposition, and deposition behavior of CVD precursors for NiSi films characterized via)

IT 7440-21-3, Silicon, uses 7631-86-9, Silica, uses

RL: NUU (Other use, unclassified); USES (Uses)
(substrate; vapor pressure, thermal decomposition, and deposition behavior of CVD precursors for NiSi films)

IT 12035-57-3, Nickel silicide (NiSi)

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
(vapor pressure, thermal decomposition, and deposition behavior of CVD precursors for NiSi films)

IT 1293-95-4, Bis(methylcyclopentadienyl)Nickel 12107-46-9,
Allyl(cyclopentadienyl)Nickel

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)

(vapor pressure, thermal decomposition, and deposition behavior of CVD precursors for NiSi films)

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L56 ANSWER 7 OF 28 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:250570 HCAPLUS

DOCUMENT NUMBER: 140:295965

TITLE: SiCO films for interlayer insulators and process and apparatus for deposition of SiCO film by CVD with alkoxysilicon compounds

INVENTOR(S): Nakayama, Hiroshi; Machida, Hideaki; Kada, Takeshi; Shimoyama, Norio

PATENT ASSIGNEE(S): Tri Chemical Laboratory Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004095733	A2	20040325	JP 2002-252985	20020830
JP 3743567	B2	20060208		

PRIORITY APPLN. INFO.: JP 2002-252985 20020830

AB The title process for deposition of Si-C-O containing interlayer insulator thin films employs plasma CVD of the thin film on a substrate with a vapor-phase alkoxysilicon compound which is evaporated on a hot filament. The process makes possible CVD deposition of the SiCO interlayer insulator thin-films at a desired Si-C-O composition in excellent controlled quality. The SiCO thin films may have elec. resistance higher than that of SiO₂.

IC ICM H01L021-316

ICS C23C016-40; H01L021-31; H01L021-768

CC 76-10 (Electric Phenomena)

Section cross-reference(s): 57

ST silicon carbide oxide film plasma CVD alkoxysilicon evapn deposition

IT Integrated circuits

(ULSI, deposition of SiOC interlayer insulator film on; SiCO films for interlayer insulators and process and apparatus for deposition of SiCO film by CVD with alkoxysilicon compds.)

IT Polysiloxanes, properties

RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)

(alkyl; SiCO films for interlayer insulators and process and apparatus for deposition of SiCO film by CVD with alkoxysilicon

- compsd.)
- IT **Vapor deposition process**
(chemical; SiCO films for interlayer insulators and process and apparatus for deposition of SiCO film by CVD with alkoxysilicon compds.)
- IT **Dielectric films**
(interlayer, SiOC thin film for; SiCO films for interlayer insulators and process and apparatus for deposition of SiCO film by CVD with alkoxysilicon compds.)
- IT **Vapor deposition process**
(plasma, of silicon carbide oxide thin film, from alkoxysilicon vapor; SiCO films for interlayer insulators and process and apparatus for deposition of SiCO film by CVD with alkoxysilicon compds.)
- IT 7440-25-7, Tantalum, properties 7440-33-7, Tungsten, properties
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(hot filament, for evaporation of reactant; SiCO films for interlayer insulators and process and apparatus for deposition of SiCO film by CVD with alkoxysilicon compds.)
- IT 39345-87-4P, Silicon carbide oxide
RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)
(interlayer insulator film; SiCO films for interlayer insulators and process and apparatus for deposition of SiCO film by CVD with alkoxysilicon compds.)
- IT 78-10-4, Tetraethoxysilane
RL: RCT (Reactant); RACT (Reactant or reagent)
(vaporized reactant; SiCO films for interlayer insulators and process and apparatus for deposition of SiCO film by CVD with alkoxysilicon compds.)

L56 ANSWER 8 OF 28 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:716038 HCAPLUS

DOCUMENT NUMBER: 139:238456

TITLE: Material for forming gate oxide film, CVD of gate oxide, and semiconductor device

INVENTOR(S): Machida, Hideaki; Oshita, Akio; Ishikawa, Masato

PATENT ASSIGNEE(S): Tri Chemical Laboratory Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003257967	A2	20030912	JP 2002-59321	20020305
			JP 2002-59321	20020305

PRIORITY APPLN. INFO.:

AB A Si source material for CVD of a high-purity amorphous gate oxide film containing Si, O, and ≥ 2 of Zr, Hf, and Ln comprises $\text{Si}(\text{NCO})_x\text{H}_4-x$, $x = 1 - 4$. Addnl., ≥ 1 of the following may be used: (i-OEt) $_4$ Zr, (t-OBu) $_4$ Zr, (DPM) $_4$ Zr, (Me $_2$ N) $_4$ Zr, (Et $_2$ N) $_4$ Zr, (Et(Me) $_2$ N) $_4$ Zr, (i-OPr) $_4$ Hf, (t-OBu) $_4$ Hf, (DPM) $_4$ Hf, (Me $_2$ N) $_4$ Hf, (Et $_2$ N) $_4$ Hf, (Et(Me) $_2$ N) $_4$ Hf, (DPM) $_3$ Ln, Ln[N(SiMe $_3$) $_2$] $_3$, [C $_5$ H $_5$] $_3$ Ln, [(CH $_3$)C $_5$ H $_4$] $_3$ Ln, [(C $_2$ H $_5$)C $_5$ H $_4$] $_3$ Ln, [i-C $_3$ H $_7$ C $_5$ H $_4$] $_3$ Ln, and [(n-C $_4$ H $_9$)C $_5$ H $_4$] $_3$ Ln, (Et $_2$ N) $_4$ Zr, (Et $_2$ N) $_4$ Hf, and Ln[N(SiMe $_3$) $_2$] $_3$. A device having a gate oxide film formed using the above source material is also described.

IC ICM H01L021-316

CC 76-3 (Electric Phenomena)
Section cross-reference(s): 29, 75, 78

ST gate oxide **film** semiconductor device **silicon** source
silicon cyanate

IT Vapor deposition process
(chemical; **silicon** source material for CVD of gate oxide
film and semiconductor device)

IT Dielectric **films**
MOS devices
Semiconductor devices
(**silicon** source material for CVD of gate oxide **film**
and semiconductor device)

IT Rare earth oxides
RL: NUU (Other use, unclassified); USES (Uses)
(**silicon**; **silicon** source material for CVD of gate
oxide **film** and semiconductor device)

IT 7439-91-0D, Lanthanum, dionate, disilylamino, cyclopentdienyl, or
monoalkylcyclopentadienyl salts 7440-00-8D, Neodymium, dionate,
disilylamino, cyclopentdienyl, or monoalkylcyclopentadienyl salts
7440-10-0D, Praseodymium, dionate, disilylamino, cyclopentdienyl, or
monoalkylcyclopentadienyl salts 7440-19-9D, Samarium, dionate,
disilylamino, cyclopentdienyl, or monoalkylcyclopentadienyl salts
7440-27-9D, Terbium, dionate, disilylamino, cyclopentdienyl, or
monoalkylcyclopentadienyl salts 7440-52-0D, Erbium, dionate,
disilylamino, cyclopentdienyl, or monoalkylcyclopentadienyl salts
7440-58-6D, Hafnium, alkoxide, alkylamino, or dionate salts 7440-64-4D,
Ytterbium, dionate, disilylamino, cyclopentdienyl, or
monoalkylcyclopentadienyl salts 7440-67-7D, Zirconium, alkoxide,
alkylamino, or dionate salts
RL: NUU (Other use, unclassified); USES (Uses)
(**silicon** source material for CVD of gate oxide **film**
and semiconductor device)

L56 ANSWER 9 OF 28 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:411994 HCAPLUS

DOCUMENT NUMBER: 138:409708

TITLE: **Silicon** carbide **films**, their
formation by vapor deposition,
alkyl **silicon** compound raw materials,
devices equipped with **films**, and apparatus
for **film** formation

INVENTOR(S): Nakayama, Hiroshi; Machida, Hideaki;
Shimoyama, Norio

PATENT ASSIGNEE(S): Tri Chemical Laboratory Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003155567	A2	20030530	JP 2001-350485	20011115
JP 3661034	B2	20050615		
PRIORITY APPLN. INFO.:			JP 2001-350485	20011115
OTHER SOURCE(S):	MARPAT 138:409708			
AB	Method for formation of films containing Si and C is carried out by evaporative deposition in a chamber equipped with a heated filament and containing alkyl silicon. Preferable process for formation of films containing Si			

and C, in Si:C ratio of 0.0000001:99.9999999-99.9999999:0.0000001, carried out in a chamber equipped with a filament, heated to 800-3000°, is also claimed. Thus manufactured films, preferably having a broad Si(111) peak at .apprx.28° in x-ray diffractometry, free of sharp peaks such as those of SiC crystals, and are not amorphous are also claimed. The alkyl silicon compds., devices equipped with thus prepared films, and apparatus for carrying out the process are also claimed. Si carbide films with desired Si:C ratio are safely manufactured

- IC ICM C23C016-42
ICS C01B031-36; H01L021-31; H01L021-314
- CC 75-1 (Crystallography and Liquid Crystals)
- ST **silicon carbide film vapor deposition; alkylsilane vapor deposition silicon carbon film**
- IT Heaters
(filaments; **vapor deposition** of SiO-1C0-1 films from alkylsilanes in chambers equipped with filament heaters)
- IT Filaments
Vapor deposition apparatus
(heater filament in deposition chamber; **vapor deposition** of SiO-1C0-1 films from alkylsilanes in chambers equipped with filament heaters)
- IT 107992-37-0P, **Silicon carbide** (SiO-1C0-1)
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(heater filament in deposition chamber; **vapor deposition** of SiO-1C0-1 films from alkylsilanes in chambers equipped with filament heaters)
- IT 7439-88-5, Iridium, uses 7439-89-6, Iron, uses 7439-96-5, Manganese, uses 7439-98-7, Molybdenum, uses 7440-02-0, Nickel, uses 7440-03-1, Niobium, uses 7440-04-2, Osmium, uses 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses 7440-15-5, Rhenium, uses 7440-16-6, Rhodium, uses 7440-18-8, Ruthenium, uses 7440-25-7, Tantalum, uses 7440-26-8, Technetium, uses 7440-32-6, Titanium, uses 7440-33-7, Tungsten, uses 7440-47-3, Chromium, uses 7440-48-4, Cobalt, uses 7440-58-6, Hafnium, uses 7440-62-2, Vanadium, uses 7440-67-7, Zirconium, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(heater filament in deposition chamber; **vapor deposition** of SiO-1C0-1 films from alkylsilanes in chambers equipped with filament heaters)
- IT 75-76-3, Tetramethylsilane 542-91-6, Diethylsilane 617-86-7, Triethylsilane 631-36-7, Tetraethylsilane 992-94-9 993-07-7, Trimethylsilane 1111-74-6, Dimethylsilane 2814-79-1, Monoethyl silane
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(**vapor deposition** of SiO-1C0-1 films from alkylsilanes in chambers equipped with filament heaters)

L56 ANSWER 10 OF 28 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:411364 HCAPLUS

DOCUMENT NUMBER: 139:222234

TITLE: Characterization of Cat-CVD grown Si-C and Si-C-O dielectric films for ULSI applications

AUTHOR(S): Takatsuji, K.; Kawakami, M.; Makita, Y.; Murakami, K.; Nakayama, H.; Miura, Y.; Shimoyama, N.; **Machida, H.**

CORPORATE SOURCE: Graduate School of Engineering, Department of Applied Physics, Osaka City University, Sumiyoshi, Osaka, 558-8585, Japan

SOURCE: Thin Solid Films (2003), 430(1-2), 116-119
CODEN: THSFAP; ISSN: 0040-6090
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Si-C films with the Si compns. ranging from 40 to 70% were grown by Cat-CVD using dimethylsilane [DMSi, SiMe₂H₂] compds. Tetraethoxysilane [TEOS, Si(OC₂H₅)₄] and dimethyldimethoxysilane [DMDMOS, SiMe₂(OCH₃)₂] gas source gave the authors Si-C-O (C-doped SiO_x) films with wide ternary alloy compns. The dielec. constant of a Si-C film was evaluated by C-V measurements (at 1 MHz) using Al/Si-C/n-Si(001)/Cu MIS structure. The relative dielec. constant value of a Si-C film is 3.0. The resistivity of the Si-C layer with 1 mm diameter and 0.24 μm thickness is >24.5 Gohm·cm. These results gave the authors promising characteristics of Si-C and Si-C-O films grown by alkylsilane- and alcoxysilane-based Cat-CVD.

CC 76-3 (Electric Phenomena)
Section cross-reference(s): 73

ST CVD **silicon** carbide oxide dielec interconnection ULSI

IT Integrated circuits
(ULSI; elec. and optical properties of CVD grown **silicon** carbide and **silicon** carbide oxide dielec. **films** for ULSI interconnections)

IT Vapor deposition process
(chemical; elec. and optical properties of CVD grown **silicon** carbide and **silicon** carbide oxide dielec. **films** for ULSI interconnections)

IT Electric capacitance-potential relationship
Electric insulators
IR spectra
Interconnections, electric
MIS devices
X-ray photoelectron spectroscopy
(elec. and optical properties of CVD grown **silicon** carbide and **silicon** carbide oxide dielec. **films** for ULSI interconnections)

IT 39345-87-4P, **Silicon** carbide oxide 107992-37-0P, **Silicon** carbide (SiO-1C0-1) 116551-27-0P, **Silicon** oxide SiO_x
RL: PNU (Preparation, unclassified); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(elec. and optical properties of CVD grown **silicon** carbide and **silicon** carbide oxide dielec. **films** for ULSI interconnections)

IT 78-10-4, Tetraethoxysilane 1111-74-6, Dimethylsilane 1112-39-6, Dimethyldimethoxysilane
RL: RCT (Reactant); RACT (Reactant or reagent)
(elec. and optical properties of CVD grown **silicon** carbide and **silicon** carbide oxide dielec. **films** for ULSI interconnections)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L56 ANSWER 11 OF 28 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:411358 HCAPLUS
DOCUMENT NUMBER: 139:237894
TITLE: Catalytic CVD growth of Si-C and Si-C-O alloy **films** by using alkylsilane and related compounds
AUTHOR(S): Nakayama, H.; Takatsuji, K.; Murakami, K.; Miura, Y.;

CORPORATE SOURCE: Shimoyama, N.; Machida, H.
Graduate School of Engineering, Department of Applied
Physics, Osaka City University, Sumiyoshi, Osaka,
558-8585, Japan

SOURCE: Thin Solid Films (2003), 430(1-2), 87-90
CODEN: THSFAP; ISSN: 0040-6090

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Cat-CVD method was applied to the growth of Si-C and Si-C-O alloy thin
films. Growth mechanism was studied with emphasis on the effects of
filament materials. Growth rates and alloy compns. were measured for W,
Ta, Mo and Pt filaments at the filament temps. ranging from 1300 to
2000°. Si_{1-x}C_x films with x ranging from 0.38 to 0.7 could be
grown by using single mol. source SiMe₂H₂ (dimethylsilane). Si-C-O
ternary alloy films was successfully prepared by using Si(OC₂H₅)₄
(tetraethoxysilane) and SiMe₂(OCH₃)₂ (dimethyldimethoxysilane) mols.

CC 75-1 (Crystallography and Liquid Crystals)

ST catalytic CVD growth **silicon** carbide oxide **film**
alkylsilane

IT Catalysts
(catalytic CVD growth of Si-C and Si-C-O alloy **films** by using
alkylsilane and related compds.)

IT Vapor deposition process
(chemical; catalytic CVD growth of Si-C and Si-C-O alloy **films**
by using alkylsilane and related compds.)

IT 591758-34-8, **Silicon** carbide (Si_{0.3}-0.62C_{0.38}-0.7)
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP
(Physical process); PROC (Process)
(catalytic CVD growth of **silicon** carbide **films**
using dimethylsilane single mol. source)

IT 1111-74-6, Dimethylsilane
RL: RCT (Reactant); RACT (Reactant or reagent)
(catalytic CVD growth of **silicon** carbide **films**
using dimethylsilane single mol. source)

IT 39345-87-4, **Silicon** carbide oxide
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP
(Physical process); PROC (Process)
(catalytic CVD growth of **silicon** carbide **films**
using tetraethoxysilane single mol. source)

IT 78-10-4, Tetraethoxysilane
RL: RCT (Reactant); RACT (Reactant or reagent)
(catalytic CVD growth of **silicon** carbide **films**
using tetraethoxysilane single mol. source)

IT 7439-98-7, Molybdenum, uses 7440-06-4, Platinum, uses 7440-25-7,
Tantalum, uses 7440-33-7, Tungsten, uses
RL: DEV (Device component use); MOA (Modifier or additive use); USES
(Uses)
(effect of filament material and temperature on catalytic CVD growth of Si-C
and Si-C-O alloy **films** by using alkylsilane and related
compds.)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L56 ANSWER 12 OF 28 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:317916 HCAPLUS
DOCUMENT NUMBER: 138:330075
TITLE: Gate oxide **films** and materials, fabrication
of gate oxide **films**, and transistor
components having gate oxide **films** thereof

INVENTOR(S): **Machida, Hideaki; Oshita, Akio; Ogura, Atsushi; Hoshino, Asako; Ishikawa, Masato**
 PATENT ASSIGNEE(S): **Tri Chemical Laboratory Inc., Japan**
 SOURCE: **Jpn. Kokai Tokkyo Koho, 9 pp.**
 CODEN: **JKXXAF**
 DOCUMENT TYPE: **Patent**
 LANGUAGE: **Japanese**
 FAMILY ACC. NUM. COUNT: **1**
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003124460	A2	20030425	JP 2001-316147	20011015
PRIORITY APPLN. INFO.:			JP 2001-316147	20011015
AB	The title gate oxide materials contain (1) Zr, Hf, and/or lanthanides, (2) Si, (3) O, and (4) N. The gate oxide materials give transistors an amorphous gate oxide film with decreased current leakage and increased dielec. permittivity.			
IC	ICM H01L029-78 ICS H01L021-316			
CC	76-3 (Electric Phenomena) Section cross-reference(s): 57			
ST	zirconium silicon oxynitride gate oxide transistor current leakage permittivity; hafnium silicon oxynitride gate oxide transistor current leakage permittivity; lanthanide silicon oxynitride gate oxide transistor current leakage permittivity			
IT	Vapor deposition process (chemical, of gate oxide films ; silicon oxynitride gate oxide films containing Zr and Hf and lanthanides in transistors and fabrication)			
IT	Leakage current (decreased; silicon oxynitride gate oxide films containing Zr and Hf and lanthanides in transistors and fabrication)			
IT	Transistors (gate oxide films , for decreased current leakage and increased dielec. permittivity; silicon oxynitride gate oxide films containing Zr and Hf and lanthanides in transistors and fabrication)			
IT	Electric insulators (gate oxide films ; silicon oxynitride gate oxide films containing Zr and Hf and lanthanides in transistors and fabrication)			
IT	Rare earth metals, uses RL: MOA (Modifier or additive use); USES (Uses) (in gate oxide film ; silicon oxynitride gate oxide films containing Zr and Hf and lanthanides in transistors and fabrication)			
IT	Dielectric constant (increased; silicon oxynitride gate oxide films containing Zr and Hf and lanthanides in transistors and fabrication)			
IT	11105-01-4P, Silicon oxynitride RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation) (containing Zr and Hf and lanthanides; silicon oxynitride gate oxide films containing Zr and Hf and lanthanides in transistors and fabrication)			
IT	256235-56-0P, Hafnium silicon nitride oxide RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses) (gate oxide film ; silicon oxynitride gate oxide films containing Zr and Hf and lanthanides in transistors and			

- fabrication)
- IT 7440-58-6, Hafnium, uses 7440-67-7, Zirconium, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (in gate oxide film; silicon oxynitride gate oxide
 films containing Zr and Hf and lanthanides in transistors and
 fabrication)
- IT 2081-12-1 2171-98-4 2171-99-5 2172-02-3 7782-44-7, Oxygen,
 reactions 13801-49-5 15730-66-2 18865-74-2 19756-04-8 19782-68-4
 19824-55-6 63370-90-1 175923-04-3 352535-01-4
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (silicon oxynitride gate oxide films containing Zr and
 Hf and lanthanides in transistors and fabrication)
- L56 ANSWER 13 OF 28 HCAPLUS COPYRIGHT 2006 ACS on STN
- ACCESSION NUMBER: 2002:823695 HCAPLUS
- DOCUMENT NUMBER: 138:115209
- TITLE: Hf1-xSixO2 deposition by metal organic chemical
 vapor deposition using the
 Hf(Net2)4/SiH(Net2)3/O2 gas system
- AUTHOR(S): Ohshita, Yoshio; Ogura, Atsushi; Ishikawa, Masato;
 Hoshino, Asako; Hiroy, Shigeki; Suzuki, Toshie;
 Machida, Hideaki
- CORPORATE SOURCE: Toyota Technological Institute, Tempaku, Nagoya,
 468-8511, Japan
- SOURCE: Thin Solid Films (2002), 416(1-2), 208-211
 CODEN: THSFAP; ISSN: 0040-6090
- PUBLISHER: Elsevier Science B.V.
- DOCUMENT TYPE: Journal
- LANGUAGE: English
- AB Hf1-xSixO2 thin film was deposited on a Si substrate by low pressure CVD
 using the tetrakis(diethylamido)hafnium {Hf[Net2]4}/Tris(diethylamino)sila
 ne {SiH[Net2]3}/O2 gas system. During the HfO2 deposition, SiH[Net2]3
 vapor was injected and Hf1-xSixO2 film was deposited. By increasing the
 amount of the supplied SiH[Net2]3, the ratio of Si to Hf in the film
 increased and the refractive index of the film decreased. While the
 deposited HfO2 film was polycryst., Hf1-xSixO2 was amorphous. The
 step-coverage quality was slightly degraded as a result of the SiH[Net2]3
 injection. No residual C was detected in the film by XPS measurement
 indicating that the residual C amount was <1%. However, the amount of
 residual N increased with an increase in the supply of SiH[Net2]3.
- CC 75-1 (Crystallography and Liquid Crystals)
- IT Vapor deposition process
 (metalorg.; surface structure and refractive index of Hf1-xSixO2
 films on silicon substrate grown by metalorg. CVD
 using the Hf(Net2)4/SiH(Net2)3/O2 gas system)
- IT Refractive index
 Surface structure
 (surface structure and refractive index of Hf1-xSixO2 films
 on silicon substrate grown by metalorg. CVD using the
 Hf(Net2)4/SiH(Net2)3/O2 gas system)
- IT 12055-23-1, Hafnium oxide (HfO2) 153023-57-5, Hafnium silicon
 oxide ((Hf,Si)O2) 485846-16-0, Hafnium oxide silicate
 (Hf0.65O0.6(SiO4)0.35)
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP
 (Physical process); PROC (Process)
 (surface structure and refractive index of Hf1-xSixO2 films
 on silicon substrate grown by metalorg. CVD using the
 Hf(Net2)4/SiH(Net2)3/O2 gas system)
- IT 7782-44-7, Oxygen, reactions 15730-66-2 19824-55-6,
 Tetrakis(diethylamido)hafnium

RL: RCT (Reactant); RACT (Reactant or reagent)
 (surface structure and refractive index of Hf1-xSixO2 films
 on silicon substrate grown by metalorg. CVD using the
 Hf(Net2)4/SiH(Net2)3/O2 gas system)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L56 ANSWER 14 OF 28 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:586582 HCAPLUS

DOCUMENT NUMBER: 137:331742

TITLE: LPCVD of TaCN thin film for barrier layer in
 Cu interconnection

AUTHOR(S): Hoshino, A.; Suzuki, T.; Hiiro, S.; Machida,
 H.; Ogura, A.; Ohshita, Y.

CORPORATE SOURCE: Technical + Development Department, TRI Chemical
 Laboratory Inc., Uenohara-machi, Kitatsuru-gun,
 Yamanashi, 409-0112, Japan

SOURCE: Advanced Metallization Conference 2000, Proceedings of
 the Conference, San Diego, CA, United States, Oct. 2-5
 and University of Tokyo, Tokyo, Japan, Oct. 19-20,
 2000 (2000), 403-408. Editor(s): Edelstein, Dan.
 Materials Research Society: Warrendale, Pa.

CODEN: 69CXY4; ISBN: 1-55899-574-9

DOCUMENT TYPE: Conference

LANGUAGE: English

AB We synthesized a mixture of EtN:Ta(Net2)3 and Ta(Net2)4 as a precursor for
 Ta carbonitride CVD and investigated its properties. The vapor pressure
 is slightly low in comparison with TDMAT, and appropriate for CVD
 precursor (7 torr at 60°). This precursor is relatively safety
 because it is not pyrophoric in air. Moreover, purification is easy because it
 is liquid, so can be distilled. Using this precursor, we deposited Ta
 carbonitride thin film by low-pressure CVD. Depositions were successfully
 carried out at 375-500° using H2 carrier gas. Below 400°,
 excellent step coverage was achieved, because the surface reaction was
 dominant. However, the film resistivity increased with decreasing
 substrate temperature. To obtain low resistivity of film deposited at a lower
 temperature, we increased the amount of H2 gas injected during deposition. The
 resistivity decreased with increasing H2 gas flow rate, and injecting a
 large amount of H2 gas was found to be an effective method of obtaining both
 low resistivity and high quality step coverage. The concns. of C and N in
 the film were measured: C > 10%, N < 1%. Microstructural observation by
 TEM revealed that the deposited film was an amorphous phase. Finally, we
 prepared CVD-Cu/CVD-Ta carbonitride/Si structure film, and after thermal
 treatment (500° for 30 min.), Cu did not diffuse into the Si layer.
 Thus, this Ta carbonitride film had good barrier properties.

CC 76-14 (Electric Phenomena)

Section cross-reference(s): 75

ST copper interconnection tantalum carbonitride barrier layer CVD

IT Interconnections, electric

(LPCVD of TaCN thin film for barrier layer in Cu
 interconnections)

IT Electric resistance

Microstructure

(LPCVD of TaCN thin film for barrier layer in Cu
 interconnections characterized via)

IT Vapor deposition process

(chemical, low-pressure; LPCVD of TaCN thin film for barrier
 layer in Cu interconnections)

IT 7440-50-8, Copper, properties 39424-52-7, Tantalum carbide
 nitride

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)

(LPCVD of TaCN thin film for barrier layer in Cu interconnections)

IT 67313-80-8 98145-63-2, Tetrakis(diethylamido)Tantalum
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(precursor; LPCVD of TaCN thin film for barrier layer in Cu interconnections)

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L56 ANSWER 15 OF 28 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:407300 HCAPLUS

DOCUMENT NUMBER: 136:410026

TITLE: Materials and method for forming Si-type insulator films for semiconductor devices

INVENTOR(S): Machida, Hideaki; Noda, Naoto

PATENT ASSIGNEE(S): Tri Chemical Laboratory Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002158223	A2	20020531	JP 2000-350528	20001117
			JP 2000-350528	20001117

PRIORITY APPLN. INFO.:

AB The insulator film are formed using Si-type materials with the formula: $\{R_3(R_4)N\}_3Si-\{C(R_1)R_2\}_n-Si\{N(R_5)R_6\}_3$, where $R_1, R_2 = H$, hydrocarbon groups, or X(halogen atom)-substituted hydrocarbon groups (R_1 and R_2 can be same), $n = 1-5$ integer, R_3, R_4, R_5 and $R_6 = H$, hydrocarbon groups or X(halogen atom)-substituted hydrocarbon groups (R_3, R_4, R_5 and R_6 can be same). The insulator films may be formed on substrates by CVD.

IC ICM H01L021-316
ICS C23C016-30; C23C016-40; H01L021-768

CC 76-3 (Electric Phenomena)

ST silicon insulator film material CVD; semiconductor device silicon insulator film CVD

IT Vapor deposition process
(chemical; materials and method for forming Si-type insulator films for semiconductor devices)

IT Dielectric films
Oxidizing agents
Semiconductor device fabrication
(materials and method for forming Si-type insulator films for semiconductor devices)

IT Amines, uses
RL: NUU (Other use, unclassified); USES (Uses)
(solvents; materials and method for forming Si-type insulator films for semiconductor devices)

IT 7631-86-9P, Silica, uses
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(materials and method for forming Si-type insulator films for semiconductor devices)

IT 20248-45-7 75738-28-2 431949-49-4 431949-50-7

RL: RCT (Reactant); RACT (Reactant or reagent)
 (materials and method for forming Si-type insulator **films** for semiconductor devices)

IT 7722-84-1, Hydrogen peroxide, reactions 7732-18-5, Water, reactions 7782-44-7, Oxygen, reactions 10024-97-2, Nitrogen oxide (N₂O), reactions 10028-15-6, Ozone, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
 (oxidizing agents; materials and method for forming Si-type insulator **films** for semiconductor devices)

IT 124-18-5, Decane 124-40-3, Dimethyl amine, uses

RL: NUU (Other use, unclassified); USES (Uses)
 (solvent; materials and method for forming Si-type insulator **films** for semiconductor devices)

IT 7440-21-3, **Silicon**, uses

RL: DEV (Device component use); USES (Uses)
 (substrates; materials and method for forming Si-type insulator **films** for semiconductor devices)

L56 ANSWER 16 OF 28 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:238205 HCAPLUS

DOCUMENT NUMBER: 136:287566

TITLE: Formation of hafnium-type gate oxide **films** for semiconductor devices

INVENTOR(S): **Machida, Hideaki**; Hoshino, Asako

PATENT ASSIGNEE(S): Tri Chemical Laboratory Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002093804	A2	20020329	JP 2000-282198	20000918
JP 3409290	B2	20030526		

PRIORITY APPLN. INFO.: JP 2000-282198 20000918

AB Compds. (R₁R₂N)4Hf, where R₁ and R₂ are alkyl group or Si compds., and may be or may not be same., are used for effectively forming Hf-type oxide films. Si compds. may further be used in the process.

IC ICM H01L021-316

ICS C23C016-40; H01L029-78

CC 76-3 (Electric Phenomena)

ST hafnium **silicon** oxide **film** semiconductor device; gate oxide **film** hafnium **silicon**

IT **Vapor deposition** process

(chemical; forming of hafnium-type gate oxide **films** for semiconductor devices)

IT Dielectric **films**

Semiconductor device fabrication

(forming of hafnium-type gate oxide **films** for semiconductor devices)

IT Oxides (inorganic), uses

RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)

(forming of hafnium-type gate oxide **films** for semiconductor devices)

IT 12055-23-1P, Hafnium oxide 163332-36-3P, Hafnium **silicon** oxide

RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)

(forming of hafnium-type gate oxide films for semiconductor devices)

IT 109-89-7, Diethylamine, reactions 124-18-5, Decane 142-82-5, Heptane, reactions 1624-01-7 4693-04-3 15112-89-7 15730-66-2 17048-10-1 19782-68-4 19824-55-6 27804-64-4 352535-01-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(materials for forming of hafnium-type gate oxide films for semiconductor devices)

L56 ANSWER 17 OF 28 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:238204 HCAPLUS

DOCUMENT NUMBER: 136:287565

TITLE: Materials for forming zirconia-type gate oxide films for semiconductor devices

INVENTOR(S): Machida, Hideaki; Hoshino, Asako; Nozu, Sadao; Morita, Ryoko; Noda, Naoto; Yasuhara, Shigeo

PATENT ASSIGNEE(S): Tri Chemical Laboratory Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002093803	A2	20020329	JP 2000-280245	20000914
			JP 2000-280245	20000914

PRIORITY APPLN. INFO.:
AB The materials are the compds. (R1R2N)4Zr, where R1 and R2 are alkyl group or Si compds., and may be or may not be same. The materials are placed on substrates and decomposed to form zirconia-type gate oxide films.

IC ICM H01L021-316
ICS C23C016-40

CC 76-3 (Electric Phenomena)

ST zirconia gate oxide film semiconductor device

IT Vapor deposition process
(chemical; materials for forming zirconia-type gate oxide films for semiconductor devices)

IT Dielectric films
Semiconductor device fabrication
(materials for forming zirconia-type gate oxide films for semiconductor devices)

IT Oxides (inorganic), uses
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(materials for forming zirconia-type gate oxide films for semiconductor devices)

IT 1314-23-4P, Zirconia, uses 10101-52-7P, Zirconium silicate
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(materials for forming zirconia-type gate oxide films for semiconductor devices)

IT 124-18-5, Decane 124-40-3, Dimethylamine, reactions 142-82-5, Heptane, reactions 1624-01-7 4693-04-3 13801-49-5 15112-89-7 15730-66-2 17048-10-1 19756-04-8 27804-64-4 175923-04-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(materials for forming zirconia-type gate oxide films for semiconductor devices)

IT 7440-21-3, Silicon, uses
RL: DEV (Device component use); USES (Uses)

(substrates; materials for forming zirconia-type gate oxide
films for semiconductor devices)

L56 ANSWER 18 OF 28 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:171546 HCAPLUS

DOCUMENT NUMBER: 136:208799

TITLE: Material for forming conductive Ta-based film
, CVD of conductive Ta-based film, and ULSI

INVENTOR(S): Machida, Hideaki; Hoshino, Asako; Suzuki,
Toshie

PATENT ASSIGNEE(S): Tri Chemical Laboratory Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 2002069640	A2	20020308	JP 2000-266545	20000904
PRIORITY APPLN. INFO.:				JP 2000-266545	20000904
AB	The title material comprises $C_2H_5N=Ta(N(C_2H_5)_2)_3$ and $(N(C_2H_5)_2)_4Ta$. Addnl., the material may contain a C5-40 hydrocarbon or C2-40 amine solvent. A CVD method using the above material is also described. A ULSI is also described, which has a Cu wiring on a conductive Ta-based film.				
IC	ICM C23C016-18 ICS H01L021-285				
CC	76-2 (Electric Phenomena)				
ST	ethylamino ethylimino tantalum CVD conductive film				
IT	copper wiring ULSI				
IT	Electric circuits (ULSI; material for forming conductive Ta-based film, CVD of conductive Ta-based film, and ULSI)				
IT	Vapor deposition process (chemical; material for forming conductive Ta-based film, CVD of conductive Ta-based film, and ULSI)				
IT	Films (elec. conductive; material for forming conductive Ta-based film, CVD of conductive Ta-based film, and ULSI)				
IT	Electric conductors (films; material for forming conductive Ta-based film , CVD of conductive Ta-based film, and ULSI)				
IT	Interconnections, electric (material for forming conductive Ta-based film, CVD of conductive Ta-based film, and ULSI)				
IT	39424-52-7, Tantalum carbide nitride 159577-55-6, Silicon tantalum carbide nitride RL: CPS (Chemical process); DEV (Device component use); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses) (material for forming conductive Ta-based film, CVD of conductive Ta-based film, and ULSI)				
IT	7440-50-8, Copper, uses RL: DEV (Device component use); USES (Uses) (material for forming conductive Ta-based film, CVD of conductive Ta-based film, and ULSI)				
IT	108-88-3, Toluene, uses 109-89-7, Diethylamine, uses 111-84-2, Nonane 142-82-5, Heptane, uses 544-25-2, Cycloheptatriene 871-31-8, Ethyl azide 1330-20-7, Xylene, uses 67313-80-8D, $C_2H_5N=Ta(N(C_2H_5)_2)_3$				

98145-63-2

RL: NUU (Other use, unclassified); USES (Uses)
 (material for forming conductive Ta-based film, CVD of
 conductive Ta-based film, and ULSI)

L56 ANSWER 19 OF 28 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:169969 HCAPLUS
 DOCUMENT NUMBER: 136:225233
 TITLE: CVD method, auxiliary source material for CVD, and
 film and device fabricated by CVD
 INVENTOR(S): Funakubo, Hiroshi; Murakami, Yasushi; Machida,
 Hideaki
 PATENT ASSIGNEE(S): Tri Chemical Laboratory Inc., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002069639	A2	20020308	JP 2000-265521	20000901
JP 3478389	B2	20031215		
US 2002055001	A1	20020509	US 2001-943459	20010831
US 2003203112	A1	20031030	US 2003-422983	20030425
US 6773750	B2	20040810		
US 2003205168	A1	20031106	US 2003-422982	20030425
PRIORITY APPLN. INFO.:			JP 2000-265521	A 20000901
			US 2001-943459	A3 20010831

OTHER SOURCE(S): MARPAT 136:225233

AB A CVD method uses β -diketonate complex and α,β -unsatd.
 alc. for deposition of a film of a metal, metal oxide, metal nitride, or
 metal carbide at a low temperature. Specifically, the film may comprise a
 composite oxide film containing Ru+Sr, Ti+Ba+Sr, Ti+Bi, Sr+Ta+Bi, Sr+Ta+Nb,
 Pb+Zr+Ti, or Zr+Hf+La (or a conductive film containing Ru+Pt+Ir, Cu).

IC ICM C23C016-18

ICS H01L021-316

CC 76-3 (Electric Phenomena)

IT Electronic device fabrication

(CVD method, α,β -unsatd. alc. auxiliary source material for
 CVD, and film and device fabricated by CVD)

IT Films

(elec. conductive; CVD method, α,β -unsatd. alc. auxiliary
 source material for CVD, and film and device fabricated by
 CVD)

IT Electric conductors

(films; CVD method, α,β -unsatd. alc. auxiliary
 source material for CVD, and film and device fabricated by
 CVD)

IT Vapor deposition process

(metalorg.; CVD method, α,β -unsatd. alc. auxiliary source
 material for CVD, and film and device fabricated by CVD)

IT 1312-81-8, Lanthanum oxide 1314-23-4, Zirconium oxide, processes
 11115-71-2, Bismuth titanium oxide 12055-23-1, Hafnium oxide
 12169-14-1, Ruthenium strontium oxide (RuSrO₃) 37305-87-6, Barium
 strontium titanium oxide 53572-00-2, Bismuth strontium titanium oxide
 152060-61-2, Lead titanium zirconium oxide 159101-44-7, Lanthanum
 silicon oxide 174633-44-4, Silicon zirconium oxide
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical)

process); PROC (Process)

(CVD method, α,β -unsatd. alc. auxiliary source material for CVD, and **film** and device fabricated by CVD)

IT 107-18-6, 2-Propen-1-ol, uses 111-28-4, 2,4-Hexadien-1-ol 115-18-4
556-82-1, 3-Methyl-2-butene-1-ol 598-32-3, 3-Buten-2-ol 616-25-1,
1-Penten-3-ol 928-94-9, cis-2-Hexen-1-ol 928-95-0, trans-2-Hexen-1-ol
1118-71-4D, Dipivaloylmethane, transition metal and alkaline earth polyene
complexes 4798-44-1, 1-Hexen-3-ol 6117-91-5, Crotyl alcohol
7319-23-5, 3-Hexene-2,5-diol 7439-92-1D, Lead, dipivaloylmethane polyene
complexes 7440-18-8D, Ruthenium, dipivaloylmethane polyene complexes
7440-24-6D, Strontium, dipivaloylmethane polyene complexes 7440-39-3D,
Barium, dipivaloylmethane polyene complexes 7440-70-2D, Calcium,
dipivaloylmethane polyene complexes 14319-13-2 38625-54-6 63370-90-1
65353-51-7 137039-38-4 139566-53-3 142617-53-6 144665-26-9
173341-67-8

RL: NUU (Other use, unclassified); USES (Uses)

(CVD method, α,β -unsatd. alc. auxiliary source material for CVD, and **film** and device fabricated by CVD)

IT 17594-47-7, Barium bis(dipivaloylmethanate)

RL: NUU (Other use, unclassified); USES (Uses)

(DPM2Ba; CVD method, α,β -unsatd. alc. auxiliary source material for CVD, and **film** and device fabricated by CVD)

IT 118448-18-3, Calcium bis(dipivaloylmethanate)

RL: NUU (Other use, unclassified); USES (Uses)

(DPM2Ca; CVD method, α,β -unsatd. alc. auxiliary source material for CVD, and **film** and device fabricated by CVD)

IT 21319-43-7, Lead bis(dipivaloylmethanate)

RL: NUU (Other use, unclassified); USES (Uses)

(DPM2Pb; CVD method, α,β -unsatd. alc. auxiliary source material for CVD, and **film** and device fabricated by CVD)

IT 36830-74-7, Strontium bis(dipivaloylmethanate)

RL: NUU (Other use, unclassified); USES (Uses)

(DPM2Sr; CVD method, α,β -unsatd. alc. auxiliary source material for CVD, and **film** and device fabricated by CVD)

IT 18865-74-2, Zirconium tetrakis(dipivaloylmethanate)

RL: NUU (Other use, unclassified); USES (Uses)

(DPM4Zr; CVD method, α,β -unsatd. alc. auxiliary source material for CVD, and **film** and device fabricated by CVD)

L56 ANSWER 20 OF 28 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:612506 HCAPLUS

DOCUMENT NUMBER: 135:249661

TITLE: HfO₂ growth by low-pressure chemical **vapor deposition** using the Hf(N(C₂H₅)₂)₄/O₂ gas system

AUTHOR(S): Ohshita, Y.; Ogura, A.; Hoshino, A.; Hiiro, S.; Machida, H.

CORPORATE SOURCE: Toyota Technological Institute, Tempaku, Nagoya, 468-8511, Japan

SOURCE: Journal of Crystal Growth (2001), 233(1-2), 292-297
CODEN: JCRGAE; ISSN: 0022-0248

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB HfO₂ thin film was deposited on a Si substrate by low pressure chemical **vapor deposition** using the Hf(N(C₂H₅)₂)₄ (tetrakis-diethylamido-hafnium)/O₂ system. Hf(N(C₂H₅)₂)₄ is liquid at room temperature and

has a moderate vapor pressure for the chemical **vapor deposition** process. The precursor was transported to the

deposition chamber by a bubbling system, and the HfO₂ films were deposited as functions of the deposition temperature and O₂ flow rate. Typical deposition temperature was 300-450°. Although the source gas has N in the mol., the amount of residual N was small. The residual C amount was reduced by increasing the injected O₂ flow rate. On the other hand, the amount of the residual N was almost constant independent of O₂ flow rate, and was decreased by increasing the deposition temperature

CC 75-1 (Crystallography and Liquid Crystals)
Section cross-reference(s): 57

ST hafnia ceramic film CVD hafnium diethylamido precursor

IT **Films**
(ceramic; growth of hafnia films by low-pressure CVD using Hf(N(C₂H₅)₂)₄/O₂ gas system)

IT **Vapor deposition process**
(chemical; HfO₂ growth by low-pressure CVD using Hf(N(C₂H₅)₂)₄/O₂ gas system)

IT **Ceramics**
(films; growth of hafnia films by low-pressure CVD using Hf(N(C₂H₅)₂)₄/O₂ gas system)

IT 12055-23-1P, Hafnia
RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation)
(films; HfO₂ growth by low-pressure CVD using Hf(N(C₂H₅)₂)₄/O₂ gas system)

IT 7440-44-0, Carbon, occurrence 7727-37-9, Nitrogen, occurrence
RL: OCU (Occurrence, unclassified); OCCU (Occurrence)
(in HfO₂ films grown by low-pressure CVD using Hf(N(C₂H₅)₂)₄/O₂ gas system)

IT 7440-21-3, **Silicon**, uses
RL: NUU (Other use, unclassified); USES (Uses)
(substrate; in HfO₂ growth by low-pressure CVD using Hf(N(C₂H₅)₂)₄/O₂ gas system)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L56 ANSWER 21 OF 28 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:367979 HCAPLUS

DOCUMENT NUMBER: 133:97664

TITLE: Preparation of Bi-layered ferroelectric thin film by thermal MOCVD

AUTHOR(S): Funakubo, Hiroshi; Nukaga, Norimasa; Ishikawa, Katsuyuki; Kokubun, Hiroshi; **Machida, Hideaki**; Shinozaki, Kazuo; Mizutani, Nobuysau

CORPORATE SOURCE: Tokyo Institute of Technology, Yokohama, 226-8502, Japan

SOURCE: Ferroelectrics (1999), 232(1-4), 1003-1008
CODEN: FEROA8; ISSN: 0015-0193

PUBLISHER: Gordon & Breach Science Publishers

DOCUMENT TYPE: Journal

LANGUAGE: English

AB SrBi₂Ta₂O₉ thin films were prepared by metalorg. chemical **vapor deposition**(MOCVD) from Bi(CH₃)₃ - Sr[Ta(O·C₂H₅)₆]₂, - O₂ system. Bi(CH₃)₃ is liquid and take a higher vapor pressure and gas concentration stability than conventionally used Bi sources, Bi(C₇H₇)₃ and Bi(C₆H₅)₃. The single phase of SrBi₂Ta₂O₉ film was successfully prepared at 670°C on (111)Pt/Ti/SiO₂/Si substrate. Epitaxially grown SrBi₂Ta₂O₉ with c-axis orientation was also deposited on (100)SrTiO₃ substrates at low temperature of 640°C.

CC 76-8 (Electric Phenomena)

ST MOCVD strontium bismuth tantalate ferroelec **film**
 IT **Vapor deposition** process
 (metallorg.; preparation of Bi-layered ferroelec. thin **film** by MOCVD)
 IT Epitaxial **films**
 Ferroelectric **films**
 (preparation of Bi-layered ferroelec. thin **film** by MOCVD)
 IT 7440-06-4, Platinum, processes 7440-32-6, Titanium, processes
 7631-86-9, Silica, processes
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (coatings; preparation of Bi-layered ferroelec. thin **film** by MOCVD)
 IT 50811-07-9P, Bismuth strontium tantalum oxide Bi₂SrTa₂O₉
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
 (preparation of Bi-layered ferroelec. thin **film** by MOCVD)
 IT 593-91-9, Trimethylbismuth 7782-44-7, Oxygen, reactions 184675-46-5
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of Bi-layered ferroelec. thin **film** by MOCVD)
 IT 7440-21-3, **Silicon**, processes 12060-59-2, Strontium titanate
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (substrates; preparation of Bi-layered ferroelec. thin **film** by MOCVD)
 REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L56 ANSWER 22 OF 28 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2000:232596 HCAPLUS
 DOCUMENT NUMBER: 132:259406
 TITLE: Ta compounds for **film** formation, formation of Ta-containing **films**, and ULSI with the **films**
 INVENTOR(S): **Machida, Hideaki**; Kurihara, Megumi; Sudo, Hiroshi; Suzuki, Toshie; Nagai, Akiko
 PATENT ASSIGNEE(S): Tori Chemical Kenkyusho K. K., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000103796	A2	20000411	JP 1998-273968	19980928
PRIORITY APPLN. INFO.:			JP 1998-273968	19980928

AB The Ta compds. have composition formula RnTaX_{5-n}L_m (R = H, (halo)alkyl, (halo)alkene, (halo)alkyne, (un)substituted aryl, Si-containing alkyl, alkene, alkyne, or (un)substituted aryl; X = H, F, Cl, Br, I; L = alkyl- or halo-substituted S, alkyl- or halo-substituted phosphine; n = integer of 0-5; m = integer of 0-4 when n = 1-5, m = integer of 1-4 when n = 0). The compds. may especially be TaCl₅.Set₂, MeTaCl₄, Me₂TaCl₃, Me₃TaCl₂, MeTaCl₄.Set₂, Me₂TaCl₃.Set₂, and/or Me₃TaCl₂.Set₂. Formation of Ta-containing layers on substrates by decomposition of Ta compds., e.g. chemical **vapor deposition**, is also claimed. ULSI having Cu wirings formed on the Ta-containing layers, e.g. Ta nitride, are also claimed. Ta-containing layers having excellent barrier characteristics are obtained.
 IC ICM C07F009-00

ICS C01G035-00; C23C016-18; C23C016-34; H01L021-285; H01L021-3205

CC 76-14 (Electric Phenomena)
Section cross-reference(s): 29

ST organometallic tantalum compd chem **vapor deposition**;
CVD organometallic tantalum ULSI fabrication; MOCVD ULSI tantalum barrier
layer formation; nitride tantalum metalorg CVD

IT **Vapor deposition** process
(metalorg.; organometallic Ta compds. for formation of Ta-containing layers
suitable as barrier layers in ULSI)

IT **Vapor deposition** process
(photochem.; organometallic Ta compds. for formation of Ta-containing
layers suitable as barrier layers in ULSI)

IT **Vapor deposition** process
(plasma; organometallic Ta compds. for formation of Ta-containing layers
suitable as barrier layers in ULSI)

IT 7440-50-8, **Copper**, miscellaneous
RL: MSC (Miscellaneous)
(barrier layers for; organometallic Ta compds. for formation of
Ta-containing layers suitable as barrier layers in ULSI)

L56 ANSWER 23 OF 28 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:198326 HCAPLUS
DOCUMENT NUMBER: 132:238802
TITLE: Chemical **vapor deposition** process
and device manufactured by the method
INVENTOR(S): **Machida, Hideaki**; Higuchi, Noboru; Kokubu,
Hiroshi; Funakubo, Hiroshi
PATENT ASSIGNEE(S): Tori Chemical Kenkyusho K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000087240	A2	20000328	JP 1998-256867	19980910
			JP 1998-256867	19980910

PRIORITY APPLN. INFO.:
AB The method involves using an organic metal compound having free groups and
performing vapor transport using a carrier gas containing a compound having the
groups or a compound having the groups as a carrier gas. A Ca-, Sr-, Ba-,
Pb-, Ta-, Cu-, Ti-, Zr-, and Al-based film are manufactured by the method.
Stable vapor transport is performed in the CVD process with decomposition
prevention of the compound

IC ICM C23C016-18
ICS C01G029-00; C23C016-34; C23C016-40; C23C016-448

CC 47-7 (Apparatus and Plant Equipment)
Section cross-reference(s): 57, 75, 76

ST metalorg CVD barium strontium titanate dielec; electrode dielec oxide
metalorg CVD; metal nitride **film** CVD; vapor transport carrier
gas dielec **film** CVD

IT **Vapor deposition** process
(chemical; **film** formation by CVD for dielec. devices)

IT Electric insulators
Electrodes
(**film** formation by CVD for dielec. devices)

IT 1304-28-5P, Barium oxide, uses 1305-78-8P, Calcium oxide, uses
1314-11-0P, Strontium oxide, uses 1314-23-4P, Zirconia, uses
1314-61-0P, Tantalum oxide (Ta2O5) 1317-36-8P, Lead oxide (PbO), uses

7440-50-8P, **Copper**, uses 12033-62-4P, Tantalum nitride (TaN)
 12058-38-7P, Tungsten nitride (WN) 12673-59-5P, Niobium Strontium oxide
 25583-20-4P, Titanium nitride (TiN) 39427-01-5P, Aluminum **copper**
 oxide 106603-81-0P, Strontium tantalum oxide
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material
 use); PREP (Preparation); USES (Uses)

(film formation by CVD for dielec. devices)

IT 64-17-5, Ethanol, processes 75-04-7, Monoethyl amine, processes
 75-64-9, tert-Butylamine, processes 109-89-7, processes 112-24-3
 112-57-2, Tetraethylene pentamine 124-40-3, Dimethylamine, processes
 598-56-1 754-05-2, Trimethylvinyl silane 1118-71-4 3236-82-6
 3275-24-9 6074-84-6 7784-21-6, Aluminum hydride 14781-45-4,
 Bis(hexafluoroacetylacetonato **copper**) 16761-83-4 17594-47-7,
 Bis(Dipivaloylmethanato barium) 36830-74-7, Bis(Dipivaloylmethanato
 strontium) 55161-66-5 59196-92-8 61156-35-2 67313-80-8
 118448-18-3, Bis(Dipivaloylmethanato calcium) 150178-00-0,
 Bis(Dipivaloylmethanato lead) 169896-41-7 184675-46-5 261929-98-0
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (film formation by CVD for dielec. devices)

IT 7440-25-7P, Tantalum, uses 7440-32-6P, Titanium, uses 7440-33-7P,
 Tungsten, uses
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material
 use); PREP (Preparation); USES (Uses)
 (wiring; film formation by CVD for dielec. devices)

L56 ANSWER 24 OF 28 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1999:597148 HCAPLUS

DOCUMENT NUMBER: 131:236031

TITLE: Method and material for deposition of metal
film

INVENTOR(S): **Machida, Hideaki**; Kuniwake, Hiroshi

PATENT ASSIGNEE(S): Tori Chemical Kenkyusho K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11256330	A2	19990921	JP 1998-55179	19980306
PRIORITY APPLN. INFO.:			JP 1998-55179	19980306
OTHER SOURCE(S):	MARPAT	131:236031		

AB A method for forming a high-quality metal film involves supplying a
 complex having ≥ 2 units of a monovalent metal coordinated to a
 β -diketone into a chamber containing a substrate, depositing a metal film
 on the substrate by the decomposition of the complex, and carrying out dry/wet
 plating the metal film. Optionally, the dry plating may involves using a
 complex having a unit of a monovalent metal coordinated to a
 β -diketone. The method is useful for forming a Cu film. Specific
 copper complexes for forming a Cu film are also given.

IC ICM C23C016-18

CC 75-1 (Crystallography and Liquid Crystals)

ST MOCVD metal film ketone complex; **copper film**

MOCVD ketone complex

IT **Vapor deposition process**

(metallorg.; method and material for deposition of metal film)

IT Metals, processes

RL: PEP (Physical, engineering or chemical process); PROC (Process)

(method and material for deposition of metal film)
 IT 95345-05-4 95345-13-4 137039-38-4 139566-53-3 219823-17-3
 244105-26-8 244105-27-9 244105-28-0 244105-29-1 244105-30-4
 244105-31-5 244105-32-6 244105-33-7 244105-34-8 244105-35-9
 244105-36-0 244105-37-1 244105-38-2 244105-39-3 244107-96-8
 RL: NUU (Other use, unclassified); USES (Uses)
 (method and material for deposition of copper film)
 IT 7440-50-8, Copper, processes
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (method and material for deposition of copper film)

L56 ANSWER 25 OF 28 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1999:463632 HCAPLUS
 DOCUMENT NUMBER: 131:123342
 TITLE: Material for copper alloy film
 formation and its manufacture by chemical
 vapor deposition
 INVENTOR(S): Machida, Hideaki
 PATENT ASSIGNEE(S): Tori Chemical Kenkyusho K. K., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11200048	A2	19990727	JP 1998-9547	19980121
			JP 1998-9547	19980121

PRIORITY APPLN. INFO.:
 OTHER SOURCE(S): MARPAT 131:123342

AB The material comprises a Cu coordination complex and an org metal or metal complex of Zr, Sn, Mg, Cr, Ni, Cd, and/or Mn. The material is useful for manufacturing the film by CVD. The manufacture method involves heating a substrate, feeding the former complex and the metal or the latter complex onto the substrate, and decomposing to form the film. The film with long electromigration lifetime is manufactured by the method.

IC ICM C23C016-18
 ICS H01L021-285; H01L021-3205
 CC 75-1 (Crystallography and Liquid Crystals)
 Section cross-reference(s): 56
 ST copper alloy film chem vapor
 deposition; CVD copper coordination complex film
 formation

IT Vapor deposition process
 (chemical; Cu alloy film formation material for CVD)
 IT 11099-27-7P 11101-28-3P 11134-36-4P 12621-37-3P 12668-36-9P
 12685-29-9P 37186-55-3P 78126-96-2P
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material
 use); PREP (Preparation); USES (Uses)
 (Cu alloy film formation material for CVD)
 IT 506-82-1, Dimethylcadmium 597-64-8, Tetraethyl tin 754-05-2,
 Trimethylvinylsilane 1066-77-9, Tetrakisdimethylamino tin 1284-72-6,
 Bis(cyclopentadienyl)magnesium 1293-95-4 12146-92-8,
 Bis(methylcyclopentadienyl)chromium 19756-04-8, Tetrakisdimethylamino
 zirconium 23840-95-1 73138-26-8, Manganocene 139566-53-3,
 Hexafluoroacetylacetonato copper trimethylvinyl silane
 219823-17-3
 RL: PEP (Physical, engineering or chemical process); PROC (Process)

(Cu alloy film formation material for CVD)

L56 ANSWER 26 OF 28 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1996:712423 HCAPLUS
 DOCUMENT NUMBER: 125:343578
 TITLE: Manufacture of **copper** β -diketonate
 complex for chemical **vapor**
deposition of **copper** thin
film
 INVENTOR(S): **Machida, Hideaki**; Kokubu, Hiroshi
 PATENT ASSIGNEE(S): Tori Kemikaru Kenkyusho Kk, Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08245639	A2	19960924	JP 1995-46821	19950307
US 5663391	A	19970902	US 1996-611654	19960306
			JP 1995-46821	A 19950307

PRIORITY APPLN. INFO.:
 OTHER SOURCE(S): MARPAT 125:343578

AB The complex is manufactured by mixing Cu₂O, 1,1,1,5,5,5-hexafluoro-2,4-pentanedione, and an adduct of an electron donor and dehydrating optionally using a desiccant. An obtained complex showed high purity and good stability.

IC ICM C07F001-08
 ICS C23C016-18

ICA H01L021-285

CC 75-1 (Crystallography and Liquid Crystals)
 Section cross-reference(s): 78

ST **copper** ketonate complex manuf CVD

IT Molecular sieves
 (desiccant; manufacture of high-purity **copper** β -diketonate complex for CVD of **copper** thin film)

IT Silica gel, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (desiccant; manufacture of high-purity **copper** β -diketonate complex for CVD of **copper** thin film)

IT Drying agents
Vapor deposition processes
 (manufacture of high-purity **copper** β -diketonate complex for CVD of **copper** thin film)

IT 1344-28-1, Alumina, uses 7487-88-9, Magnesium sulfate, uses 7757-82-6, Sodium sulfate, uses 7758-98-7, **Copper** sulfate, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (desiccant; manufacture of high-purity **copper** β -diketonate complex for CVD of **copper** thin film)

IT 86233-74-1P 137007-13-7P 137039-38-4P 139566-53-3P
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (manufacture of high-purity **copper** β -diketonate complex for CVD of **copper** thin film)

IT 111-78-4, 1,5-Cyclooctadiene 503-17-3, 2-Butyne 754-05-2, Trimethylvinylsilane 1066-54-2, Trimethylsilylacetylene 1317-39-1, **Copper** oxide (Cu₂O), reactions 1522-22-1, 1,1,1,5,5,5-Hexafluoro-2,4-pentanedione
 RL: RCT (Reactant); RACT (Reactant or reagent)

(manufacture of high-purity **copper** β -diketonate complex for
CVD of **copper** thin film)

L56 ANSWER 27 OF 28 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1996:101106 HCAPLUS
DOCUMENT NUMBER: 124:183142
TITLE: Chemical **vapor deposition** of
metal-containing **film** and solvents for it
INVENTOR(S): **Machida, Hideaki**; Nakagawa, Masakazu;
Kurihara, Megumi; Kokubu, Hiroshi; Shigyo, Masamichi;
Sudo, Hiroshi
PATENT ASSIGNEE(S): Tori Kemikaru Kenkyusho Kk, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07321039	A2	19951208	JP 1994-108518	19940523
JP 2704705	B2	19980126		

PRIORITY APPLN. INFO.: JP 1994-108518 19940523

AB The title method includes mixing an organometallic compound having free radicals with a liquid compound having the same free radicals as a solvent and decomposing the organometallic compound to form a metal-containing film on a substrate. The solvent is also clamed. The organometallic compds. have general formula $MnR_1...R_m$ (M = metal, $R_1...R_m$ = organic group, O, S, P, halogen, or Si compound group, $n = 1-4$, $m = 1-8$).

IC ICM H01L021-205
CC 56-6 (Nonferrous Metals and Alloys)
ST metal **film** CVD organometallic compd
IT **Vapor deposition** processes
(CVD of metal-containing **film** from organometallic compds. with good storage stability and solvents)

IT 7429-90-5P, Aluminum, preparation 7440-32-6P, Titanium, preparation
7440-50-8P, **Copper**, preparation
RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(CVD of metal-containing **film** from organometallic compds. with good storage stability and solvents)

IT 4419-47-0, Tetrakis(diethylamino)titanium 14781-45-4,
Bis(hexafluoroacetylacetonato)**copper** 17393-69-0 21319-43-7,
Bis(dipivaloylmethanato)lead 26919-48-2 124330-23-0 139566-53-3
148139-18-8
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(CVD of metal-containing **film** from organometallic compds. with good storage stability and solvents)

IT 67-63-0, Isopropyl alcohol, uses 108-88-3, Toluene, uses 109-89-7,
uses 112-49-2, Triethylene glycol dimethyl ether 598-56-1 754-05-2,
Trimethylvinylsilane 1118-71-4, Dipivaloylmethane 1522-22-1
RL: NUU (Other use, unclassified); USES (Uses)
(solvent; CVD of metal-containing **film** from organometallic compds. with good storage stability and solvents)

L56 ANSWER 28 OF 28 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:312447 HCAPLUS

DOCUMENT NUMBER: 120:312447
 TITLE: Chemical **vapor deposition** of
silicon compound **films** and apparatus
 therefor
 INVENTOR(S): Niimi, Nobuyuki; Ruudeii, Uiruherrumu; Ikedo, Yozo;
Machida, Hideaki
 PATENT ASSIGNEE(S): Nippon Ee Esu Emu Kk, Japan; Tori Kemikaru Kenkyusho
 Kk
 SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05251354	A2	19930928	JP 1991-116612	19910422
JP 07093271	B4	19951009		

PRIORITY APPLN. INFO.: JP 1991-116612 19910422

AB The title method comprises supply of $\text{HxSi}(\text{NR}_2)_{4-x}$ (R = alkyl; x = 0, 1, 2, or 3) into the reaction chamber under control of the gas flow for deposition. The source gas is inactive to air.

IC ICM H01L021-205
 ICS C23C016-30; C23C016-50; H01L021-31

CC 75-1 (Crystallography and Liquid Crystals)

ST chem **vapor deposition** dialkylaminesilicon source

IT **Vapor deposition** processes
 (for **silicon** compds., from dialkylaminesilicon sources)

IT 15112-89-7
 RL: PROC (Process)
 (chemical **vapor deposition** of **silicon**
 nitride **films** from)

IT 409-21-2, **Silicon** carbide, uses 7631-86-9, Silica, uses
 11105-01-4, **Silicon** nitride oxide 12033-89-5, **Silicon**
 nitride, uses
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (chemical **vapor deposition** of, from alkylaminesilicon
 sources)

APPLICATION REGISTRY NUMBER SEARCH

=> □

=> file registry

FILE 'REGISTRY' ENTERED AT 16:30:40 ON 05 SEP 2006

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FILE COVERS 1907 - 5 Sep 2006 VOL 145 ISS 11
FILE LAST UPDATED: 4 Sep 2006 (20060904/ED)

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This file contains CAS Registry Numbers for easy and accurate
substance identification.

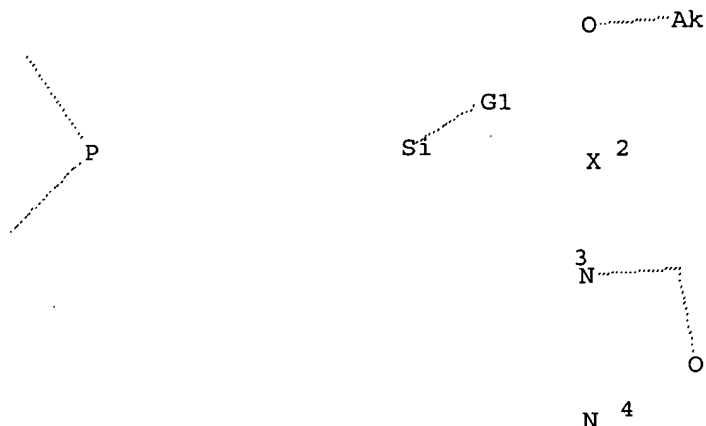
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=> d stat que L37

L2 16 SEA FILE=REGISTRY ABB=ON PLU=ON (101409-18-1/BI OR 106636-91-
3/BI OR 180590-61-8/BI OR 18082-97-8/BI OR 18586-39-5/BI OR

4145-77-1/BI OR 52090-23-0/BI OR 719300-31-9/BI OR 719300-32-0/
 BI OR 719300-33-1/BI OR 719300-34-2/BI OR 719300-35-3/BI OR
 7440-21-3/BI OR 7440-50-8/BI OR 7631-86-9/BI OR 88000-44-6/BI)
 STR

L3



G1 [@1], [@2], [@3], [@4]

Structure attributes must be viewed using STN Express query preparation.

L5 1205 SEA FILE=REGISTRY SSS FUL L3
 L17 13 SEA FILE=REGISTRY ABB=ON PLU=ON L2 AND L5
 L18 149 SEA FILE=HCAPLUS ABB=ON PLU=ON L17
 L37 26 SEA FILE=HCAPLUS ABB=ON PLU=ON L18 AND PY<1980

=> s L37 not L56

L57

26 L37 NOT L56

printed with another search

=> d ibib abs hitind hitstr L57 1-26

L57 ANSWER 1 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1981:550878 HCAPLUS

DOCUMENT NUMBER: 95:150878

TITLE: ω -Alkenyl silanes and $\alpha\omega$ -silyl alkanes

INVENTOR(S): Oswald, Alexis A.; Murrell, Lawrence L.

PATENT ASSIGNEE(S): Exxon Research and Engineering Co., USA

SOURCE: U.S., 18 pp. Cont.-in-part of U.S. 4,083,803.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 4

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4268682	A	19810519	US 1977-859826	19771212
US 3907852	A	19750923	US 1972-265507	19720623 <--
US 4083803	A	19780411	US 1975-610628	19750905 <--
PRIORITY APPLN. INFO.:			US 1972-265507	A2 19720623
			US 1975-610628	A2 19750905
AB			R3Si(CH2)n+2CH:CH2 [R3Si = Cl3Si, Cl2SiMe, (EtO)3Si, n = 2, 4, 6, 10],	

prepared by addition of R_3SiH to an alkadiene, were treated with R_2PH to give $R_2P(CH_2)_m + 2SiR_3$ ($R_1 = Ph, cyclohexyl, Pr, m = 0, 1, 6, 12$) which were complexed with $Rh(CO)_2Cl_2$ to give e.g., $[R_2P(CH_2)_m + 2SiCl_3]_2Rh(CO)Cl$ which were useful as catalyst for hydroformylation, hydrogenation, or carbonylation. Thus, addition of Cl_3SiH to $CH_2:CH(CH_2)_4CH:CH_2$ gave $Cl_3Si(CH_2)_6CH:CH_2$, which was treated with Ph_2PH to give 70% $Ph_2P(CH_2)_8SiCl_3$. The latter was treated with $Rh(CO)_2Cl_2$ to give $[Ph_2P(CH_2)_8SiCl_3]_2Rh(CO)Cl$ whose catalytic properties were determined by hydroformylation of propylene and by hydrogenation of cyclohexene.

IC C07F007-08; C07F007-18

INCL 556465000

CC 29-6 (Organometallic and Organometalloidal Compounds)

IT 4145-77-1P 52034-17-0P 52217-66-0P 52217-67-1P 52217-68-2P

52217-69-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and reaction with dicarbonyldichlororhodium)

IT 4145-77-1P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and reaction with dicarbonyldichlororhodium)

RN 4145-77-1 HCAPLUS

CN Phosphine, diphenyl[2-(trichlorosilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)

$Ph_2P-CH_2-CH_2-SiCl_3$

L57 ANSWER 2 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1980:75518 HCAPLUS

DOCUMENT NUMBER: 92:75518

TITLE: Catalysis by metal complexes. LVII. The activity of homogeneous and heterogenized rhodium(I) complexes in hydrogenation of alkenes

AUTHOR(S): Kozak, Zdenek; Capka, Martin

CORPORATE SOURCE: Inst. Chem. Process Fundam., Czech. Acad. Sci., Prague, 16502/2, Czech.

SOURCE: Collection of Czechoslovak Chemical Communications (1979), 44(9), 2624-32

CODEN: CCCCAK; ISSN: 0366-547X

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Kinetics of the liquid phase hydrogenation of alkenes catalyzed by homogeneous $Rh(I)$ complexes prepared in situ from di- μ, μ' -chlorobis[di(cyclooctene)rhodium] and 3-(triethoxysilyl)propyldiphenylphosphine and by heterogeneous analogs anchored to SiO_2 were examined. The reaction was 1st order with respect to H, alkene, and catalyst. Compared to the soluble complexes, the supported catalysts were more stable. At 0.3-0.6% Rh concns. on the support, the activity of the catalysts was not affected by pore size in the 4-10 nm region. The supported catalysts prepared by functionalization of the support followed by formation of the Rh complex were more active than their homogeneous analogs.

CC 22-5 (Physical Organic Chemistry)

Section cross-reference(s): 67

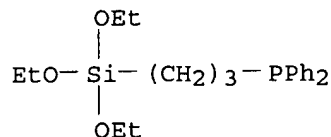
IT 52090-23-0

RL: PRP (Properties)

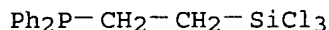
(hydrogenation catalysts from rhodium complex and, for alkenes)

IT 52090-23-0

RL: PRP (Properties)
 (hydrogenation catalysts from rhodium complex and, for alkenes)
 RN 52090-23-0 HCAPLUS
 CN Phosphine, diphenyl[3-(triethoxysilyl)propyl]- (9CI) (CA INDEX NAME)



L57 ANSWER 3 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1979:603502 HCAPLUS
 DOCUMENT NUMBER: 91:203502
 TITLE: Soluble (chlorosilyl)phosphine and siloxyphosphine complexes of rhodium(I)
 AUTHOR(S): Brzezinska, Z. C.; Cullen, W. R.
 CORPORATE SOURCE: Dep. Chem., Univ. British Columbia, Vancouver, BC, V6T 1W5, Can.
 SOURCE: Inorganic Chemistry (1979), 18(11), 3132-8
 CODEN: INOCAJ; ISSN: 0020-1669
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB A number of soluble (chlorosilyl)phosphine complexes of Rh(I) which are capable of being polymerized into poly(siloxyphosphine)-Rh(I) species were prepared and characterized. They are L'2Rh(CO)Cl, L'3RhCl, L''3RhCl, and L'4Rh2Cl2 (L' = Cl3Si(CH2)2PPh2, L'' = Cl3Si(CH2)8PPh2). Soluble siloxyphosphine-Rh(I) complexes LRh(NBD)Cl, L2Rh(CO)Cl, L3RhCl, and L4Rh2Cl2 (NBD = norbornadiene, L = [Me3SiO]2SiMe(CH2)2PPh2) were also prepared and characterized and their reactions with gaseous H2, CO, and HCl as well as their catalytic behavior in hydrogenation reactions were studied. These complexes were prepared to serve as study models for their polymeric counterparts.
 CC 78-7 (Inorganic Chemicals and Reactions)
 IT 107-46-0P 4145-76-0P 4145-77-1P 16545-47-4P 27840-95-5P
 52217-68-2P 52563-05-0P 52633-23-5P 71393-66-3P 71393-67-4P
 71393-70-9P 71393-71-0P 71393-72-1P 71393-73-2P 71425-18-8P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
 IT 4145-77-1P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
 RN 4145-77-1 HCAPLUS
 CN Phosphine, diphenyl[2-(trichlorosilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



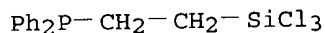
L57 ANSWER 4 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1979:142652 HCAPLUS
 DOCUMENT NUMBER: 90:142652
 TITLE: Silylhydrocarbyl phosphine transition metal complexes
 INVENTOR(S): Oswald, Alexis A.; Murrell, Lawrence L.
 PATENT ASSIGNEE(S): Exxon Research and Engineering Co., USA

SOURCE: U.S., 18 pp. Cont.-in-part of U.S. 4,083,803.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 4
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4134906	A	19790116	US 1977-829898	19770901 <--
US 3907852	A	19750923	US 1972-265507	19720623 <--
US 4083803	A	19780411	US 1975-610628	19750905 <--
PRIORITY APPLN. INFO.:			US 1972-265507	A2 19720623
			US 1975-610628	A2 19750905

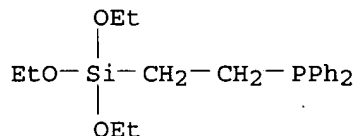
AB Heterogeneous silylhydrocarbyl phosphine transition metal complex catalysts and intermediates therefore were prepared by the selective monoaddn. of silane having Cl, alkoxy, or acyloxy groups to an α,ω -diene, followed by the addition of a phosphine to the resulting ω -alkenyl silanes to form the corresponding silylalkyl phosphines, which were then covalently anchored as such or in the form of their transition metal complexes via condensation of their reactive silane substituents with hydroxy groups of silica and metal oxides, optionally followed by complexing the free phosphine groups of anchored silylalkyl phosphines with transition metal compds. The synthesis of numerous silanes, silane-phosphine compds., and transition metal complexes is given. Most of the catalysts are Rh-containing complexes, but other metal complexes containing Pd and Co were prepared

IC C07F015-00
 INCL 260429000CY
 CC 67-1 (Catalysis and Reaction Kinetics)
 Section cross-reference(s): 29, 49
 IT 4145-77-1 52217-68-2
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with palladium and rhodium complexes)
 IT 4145-77-1
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with palladium and rhodium complexes)
 RN 4145-77-1 HCAPLUS
 CN Phosphine, diphenyl[2-(trichlorosilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



L57 ANSWER 5 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1979:132045 HCAPLUS
 DOCUMENT NUMBER: 90:132045
 TITLE: Anchoring of osmium clusters to silica
 AUTHOR(S): Brown, Simon C.; Evans, John
 CORPORATE SOURCE: Dep. Chem., Univ. Southampton, Southampton, UK
 SOURCE: Journal of the Chemical Society, Chemical Communications (1978), (23), 1063-4
 CODEN: JCCCAT; ISSN: 0022-4936
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Os₃(CO)₁₁PPh₂(CH₂)₂L (L = silica gel), H₂O₃(CO)_nPPh₂(CH₂)₂L (n = 9,10), and HO₃(CO)₉C₂L complexes anchored to silica were prepared and characterized by IR spectroscopy.

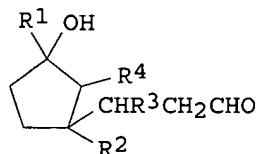
CC 78-7 (Inorganic Chemicals and Reactions)
 IT 18586-39-5
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reactions of, with silica gel and dodecacarbonyltriosmium)
 IT 18586-39-5
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reactions of, with silica gel and dodecacarbonyltriosmium)
 RN 18586-39-5 HCAPLUS
 CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



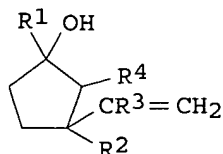
L57 ANSWER 6 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1978:508350 HCAPLUS
 DOCUMENT NUMBER: 89:108350
 TITLE: Cyclopentane derivatives
 INVENTOR(S): Gray, Robin Thomas; De Jong, Aaldert Johannes
 PATENT ASSIGNEE(S): Shell Internationale Research Maatschappij B. V.,
 Neth.
 SOURCE: Ger. Offen., 9 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2753644	A1	19780608	DE 1977-2753644	19771201 <--
DE 2753644	C2	19860925		
GB 1550004	A	19790808	GB 1976-50505	19761203 <--
FR 2372784	A1	19780630	FR 1977-36105	19771130 <--
FR 2372784	B1	19810109		
NL 7713270	A	19780606	NL 1977-13270	19771201 <--
JP 53071039	A2	19780624	JP 1977-143358	19771201 <--
JP 60031813	B4	19850724		
CH 631148	A	19820730	CH 1977-14722	19771201
PRIORITY APPLN. INFO.: GI			GB 1976-50505	A 19761203



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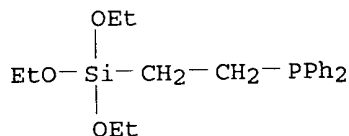


II

AB One cyclopentanol I (R1, R4 = alkyl; R2, R3 = H, alkyl) useful as aroma for perfumes, was prepared by hydroformylation of olefin II in the presence

of a Rh carbonyl complex catalyst. Thus, a mixture of isomeric plinol (from the thermal cracking of linalool at 525°), a complex of (EtO)₃SiCH₂CH₂PPh₂ with RhH(CO)(PPh₃)₃ on silica gel, C₆H₆, and cyclohexane in an autoclave was pressurized with CO and H₂ to 80 bar and stirred 4.5 h at 100° to give I (R₁ = R₃ = R₄ = Me, R₂ = H) with a distinct lily of the valley odor. A perfume composition was given.

IC C07C047-19
 CC 24-4 (Alicyclic Compounds)
 Section cross-reference(s): 62, 67, 30
 IT 18586-39-5
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (complex of, with rhodium carbonyl derivative)
 IT 18586-39-5
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (complex of, with rhodium carbonyl derivative)
 RN 18586-39-5 HCAPLUS
 CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



L57 ANSWER 7 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1978:507899 HCAPLUS

DOCUMENT NUMBER: 89:107899

TITLE: Activity of tungsten and molybdenum complexes fixed on

silicon dioxide in the disproportionation of propylene

AUTHOR(S): Chalganov, E. M.; Flikova, N. A.; Demin, E. A.;

Kuznetsov, B. N.; Ermakov, Yu. I.

CORPORATE SOURCE: Kuzbasskii Politekh. Inst., Kemerovo, USSR

SOURCE: Izvestiya Vysshikh Uchebnykh Zavedenii, Khimiya i

Khimicheskaya Tekhnologiya (1978), 21(5),

693-5

CODEN: IVUKAR; ISSN: 0579-2991

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB Disproportionation catalysts for propene based on reaction products of W(CO)₆ or Me(CO)₆ with organic ligands (e.g., 8-quinolinethiol or 2,4-pentanedione) and silica gel were prepared and examined. Surface complexes containing W and Mo in higher (5 or 6) or lower (0) oxidation states were not active without a preliminary activating treatment. Complexes of W(II) had high activity.

CC 23-2 (Aliphatic Compounds)

IT 97-93-8, uses and miscellaneous 109-77-3 123-54-6, uses and

miscellaneous 491-33-8 919-30-2 4384-81-0 10241-05-1 13283-01-7

13939-06-5 14040-11-0 18586-39-5 22172-31-2

RL: CAT (Catalyst use); USES (Uses)

(catalysts containing, for disproportionation of propene)

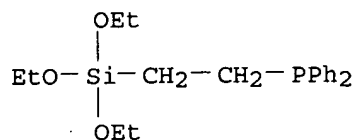
IT 18586-39-5

RL: CAT (Catalyst use); USES (Uses)

(catalysts containing, for disproportionation of propene)

RN 18586-39-5 HCAPLUS

CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



L57 ANSWER 8 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1978:442543 HCAPLUS

DOCUMENT NUMBER: 89:42543

TITLE: Synthesis and catalytic properties of complexes of transition metals with ligands fixed on oxide support surfaces. II. Fixed carbonylphosphine complexes of cobalt as catalysts for the selective hydrogenation of polyolefins

AUTHOR(S): Kuznetsov, V. L.; Kuznetsov, B. N.; Ermakov, Yu. I.

CORPORATE SOURCE: Inst. Katal., Novosibirsk, USSR

SOURCE: Kinetika i Kataliz (1978), 19(2), 346-53

CODEN: KNKTA4; ISSN: 0453-8811

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB The title catalysts were prepared by treatment of silica gel with (EtO)₃SiCH₂CH₂PR₂ (R = Ph, Bu, C₆H₁₁), followed by reaction with Co₂(CO)₈. Catalysts having 1.3-2.6% Co and P/Co ratios of 0.9-1.17 were obtained; IR anal. indicated certain structural differences. The catalytic properties of these complexes in the hydrogenation of cis,trans,trans-1,5,9-cyclododecatriene resembled those of homogeneous Co complexes, especially in the selectivity for monoene formation (≤96%).

CC 24-6 (Alicyclic Compounds)

Section cross-reference(s): 67

IT 10210-68-1D; reaction product with phosphine-modified silica gel

14911-28-5 18586-39-5 18586-39-5D, reaction product

with silica and cobalt octacarbonyl 55289-47-9D, reaction product with cobalt octacarbonyl and silica 66838-73-1D, reaction product with silica and cobalt octacarbonyl

RL: CAT (Catalyst use); USES (Uses)

(catalysts, for hydrogenation of cyclododecatriene)

IT 18586-39-5 18586-39-5D, reaction product with silica and

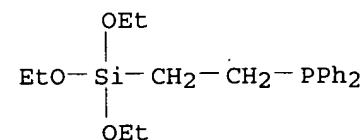
cobalt octacarbonyl

RL: CAT (Catalyst use); USES (Uses)

(catalysts, for hydrogenation of cyclododecatriene)

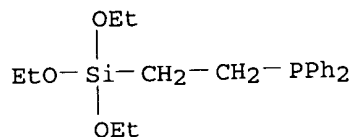
RN 18586-39-5 HCAPLUS

CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 18586-39-5 HCAPLUS

CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)

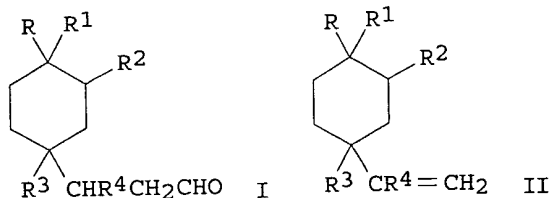


L57 ANSWER 9 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1978:169670 HCAPLUS
 DOCUMENT NUMBER: 88:169670
 TITLE: Cyclohexane derivatives
 INVENTOR(S): De Jong, Aaldert Johannes; Gray, Robin Thomas
 PATENT ASSIGNEE(S): Shell Internationale Research Maatschappij B. V.,
 Neth.
 SOURCE: Ger. Offen., 10 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2735639	A1	19780216	DE 1977-2735639	19770808 <--
GB 1528528	A	19781011	GB 1976-33050	19760809 <--
US 4122121	A	19781024	US 1977-818262	19770722 <--
NL 7708730	A	19780213	NL 1977-8730	19770808 <--
JP 53021145	A2	19780227	JP 1977-94263	19770808 <--
FR 2361326	A1	19780310	FR 1977-24376	19770808 <--
FR 2361326	B1	19810109		
US 4352937	A	19821005	US 1978-933328	19780814
PRIORITY APPLN. INFO.:			GB 1976-33050	A 19760809
			US 1977-818262	A 19770722

OTHER SOURCE(S): MARPAT 88:169670
 GI



AB Cyclohexanepropanals I (R = alkyl; R₁ = OH, R₂ = H, or R₁R₂ = epoxy; R₃, R₄ = H or alkyl), which had fruity and flowery aromas which made them useful for perfumes, were prepared by hydroformylation of vinylcyclohexanes II. Thus, II (R = R₄ = Me, R₁ = OH, R₂ = R₃ = H) was hydroformylated over RhH(CO)(PPh₃)₃-(EtO)₃SiCH₂CH₂PPh₂ to give I (R-R₄ = same as in II), which had an aroma resembling that of lilacs and lilies of the valley.

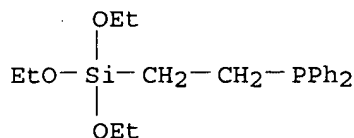
IC C07D303-32

CC 24-5 (Alicyclic Compounds)

Section cross-reference(s): 62

IT 17185-29-4 18586-39-5

RL: CAT (Catalyst use); USES (Uses)
 (catalysts, for hydroformylation of vinylcyclohexanes)
 IT 18586-39-5
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts, for hydroformylation of vinylcyclohexanes)
 RN 18586-39-5 HCAPLUS
 CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)

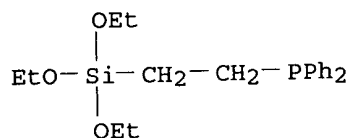


L57 ANSWER 10 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1978:104680 HCAPLUS
 DOCUMENT NUMBER: 88:104680
 TITLE: Undecenals
 INVENTOR(S): De Jong, Aaldert Johannes; Van Helden, Robert;
 Downing, Roger Stewart
 PATENT ASSIGNEE(S): Shell Internationale Research Maatschappij B. V.,
 Neth.
 SOURCE: Ger. Offen., 8 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

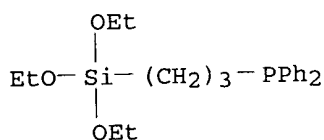
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2724484	A1	19771222	DE 1977-2724484	19770531 <--
DE 2724484	C2	19870903		
GB 1555551	A	19791114	GB 1976-22797	19760602 <--
NL 7705927	A	19771206	NL 1977-5927	19770531 <--
JP 52148011	A2	19771208	JP 1977-62877	19770531 <--
JP 61020528	B4	19860522		
FR 2361325	A1	19780310	FR 1977-16480	19770531 <--
FR 2361325	B1	19810109		
CH 629738	A	19820514	CH 1977-6645	19770531

PRIORITY APPLN. INFO.: GB 1976-22797 A 19760602
 AB Disproportionation of cyclooctene over $\text{Re}_2\text{O}_7\text{-K}^+\text{-Al}_2\text{O}_3$ gave 1,9-decadiene, which was hydroformylated over $(\text{EtO})_3\text{SiCH}_2\text{CH}_2\text{PPh}_2\text{-RhCl(CO)(PPh}_3)_3$ to give 10-undecenal and 2-methyl-9-decenal in 6:4 ratio, with 30% diene conversion.
 IC C07C047-20
 CC 23-14 (Aliphatic Compounds)
 Section cross-reference(s): 62
 IT 18586-39-5 28912-94-9
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts containing, for hydroformylation of 1,9-decadiene)
 IT 18586-39-5
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts containing, for hydroformylation of 1,9-decadiene)
 RN 18586-39-5 HCAPLUS
 CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX

NAME)



L57 ANSWER 11 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1977:535659 HCAPLUS
 DOCUMENT NUMBER: 87:135659
 TITLE: Catalysis by metal complexes. XLV. Selective
 phosphination of (3-chloropropyl)triethoxysilane, a
 new route to alkoxysilyl-substituted phosphines
 AUTHOR(S): Capka, M.
 CORPORATE SOURCE: Inst. Chem. Process Fundam., Czech. Acad. Sci.,
 Prague, Czech.
 SOURCE: Synthesis and Reactivity in Inorganic and
 Metal-Organic Chemistry (1977), 7(4), 347-54
 CODEN: SRIMCN; ISSN: 0094-5714
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB (EtO)₃Si(CH₂)₃PRPh (R = Ph, menthyl) were prepared in 64, 62% yields, resp.,
 by phosphination of Cl(CH₂)₃Si(OEt)₃ with LiPRPh.
 CC 29-7 (Organometallic and Organometalloidal Compounds)
 IT 52090-23-0P 63878-84-2P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
 IT 52090-23-0P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
 RN 52090-23-0 HCAPLUS
 CN Phosphine, diphenyl[3-(triethoxysilyl)propyl]- (9CI) (CA INDEX NAME)



L57 ANSWER 12 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1976:598882 HCAPLUS
 DOCUMENT NUMBER: 85:198882
 TITLE: Transition metal catalyst compositions
 INVENTOR(S): Young, Frank G.
 PATENT ASSIGNEE(S): Union Carbide Corp., USA
 SOURCE: U.S., 12 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 3987009	A	19761019	US 1974-532211	19741212 <--
CA 1014967	A1	19770802	CA 1973-172561	19730524 <--
IT 985430	A	19741130	IT 1973-50709	19730612 <--
BE 800896	A1	19731214	BE 1973-132251	19730614 <--
NL 7308282	A	19731218	NL 1973-8282	19730614 <--
FR 2189463	A1	19740125	FR 1973-21694	19730614 <--
JP 49052194	A2	19740521	JP 1973-67330	19730614 <--
PRIORITY APPLN. INFO.:			US 1972-263231	A1 19720615

AB Transition metal catalysts of heterogeneous type having certain desirable properties of homogeneous catalysts are described. The catalysts consist of P or Pd coordinated to a polymer containing P and Si. The catalysts in examples were the Pd and Pt complexes of diphenylphosphinyldiethylsilsesquioxane. The Pt complex was used as a silylation catalyst and the Pd complex was used as a catalyst for 2,7-octadiene-1-ol synthesis from butadiene.

IC C08G077-04

INCL 260046500E

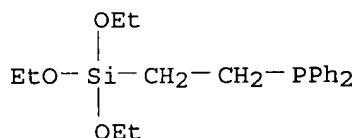
CC 67-1 (Catalysis and Reaction Kinetics)

IT 7440-05-3D, Palladium, diphenylphosphinyldiethylsilsesquioxane complexes
7440-06-4D, Platinum, diphenylphosphinyldiethylsilsesquioxane complexes
18586-39-5D, Phosphine, diphenyl[2-(triethoxysilyl)ethyl]-, palladium and platinum complexes
RL: CAT (Catalyst use); USES (Uses)
(catalysts)

IT 18586-39-5D, Phosphine, diphenyl[2-(triethoxysilyl)ethyl]-, palladium and platinum complexes
RL: CAT (Catalyst use); USES (Uses)
(catalysts)

RN 18586-39-5 HCAPLUS

CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



L57 ANSWER 13 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1976:559271 HCAPLUS

DOCUMENT NUMBER: 85:159271

TITLE: Supported transition metal complexes. V. Liquid phase catalytic hydrogenation of 1-hexene, cyclohexene and isoprene under continuous flow conditions

AUTHOR(S): Allum, K. G.; Hancock, R. D.; Howell, I. V.; Lester, T. E.; McKenzie, S.; Pitkethly, R. C.; Robinson, P. J.

CORPORATE SOURCE: BP Res. Cent., Br. Pet. Co. Ltd., Sunbury-on-Thames/Middlesex, UK

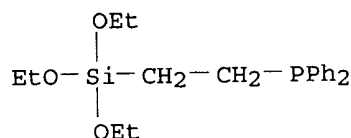
SOURCE: Journal of Catalysis (1976), 43(1-3), 331-8
CODEN: JCTLA5; ISSN: 0021-9517

DOCUMENT TYPE: Journal

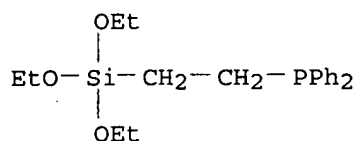
LANGUAGE: English

AB Three complexes of Rh and one of Ir of the type MX (phosphine)_n (X = halide; n = 2, 3), chemical bonded to silica, catalyze the hydrogenation of 1-hexene, cyclohexene, and isoprene in the liquid phase under a variety of continuous flow conditions (15-50 atm H₂, 20-160°). BuSH in the feedstock reduces the activity, but increases the thermal stability of the

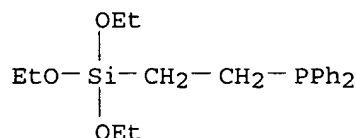
catalysts.
 CC 23-2 (Aliphatic Compounds)
 Section cross-reference(s): 24
 IT 18586-39-5 55120-19-9
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction with rhodium and iridium complexes)
 IT 18586-39-5
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction with rhodium and iridium complexes)
 RN 18586-39-5 HCAPLUS
 CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



L57 ANSWER 14 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1976:493712 HCAPLUS
 DOCUMENT NUMBER: 85:93712
 TITLE: Hydrogenation catalysts containing phosphine complexes
 of palladium bound to silica
 AUTHOR(S): Kuznetsov, V. L.; MacLaury, M. R.; Kuznetsov, B. N.;
 Collman, J. P.; Ermakov, Yu. I.
 CORPORATE SOURCE: Inst. Catal., Novosibirsk, USSR
 SOURCE: Reaction Kinetics and Catalysis Letters (1975
), 3(4), 361-9
 CODEN: RKCLAU; ISSN: 0133-1736
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Catalysts containing surface phosphine-Pd complexes on SiO₂ were prepared by
 treating SiO₂ with Ph₂PCH₂CH₂(OEt)₃, then with Pd(OAc)₂ or Pd(PhCN)₂Cl₂.
 A comparison was made between the catalytic properties of these catalysts
 and others containing supported Pd in olefin hydrogenation and 1-pentene
 isomerization; the catalysts containing supported Pd complexes had features
 characteristic of homogeneous catalytic systems.
 CC 23-2 (Aliphatic Compounds)
 IT 18586-39-5
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts, from palladium complexes, silica, and, for hydrogenation of
 alkenes and cyclopentadiene and isomerization of 1-pentene)
 IT 18586-39-5
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts, from palladium complexes, silica, and, for hydrogenation of
 alkenes and cyclopentadiene and isomerization of 1-pentene)
 RN 18586-39-5 HCAPLUS
 CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



L57 ANSWER 15 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1976:121050 HCAPLUS
 DOCUMENT NUMBER: 84:121050
 TITLE: Hydroformylation of α -olefins by rhodium complexes linked to silica
 AUTHOR(S): Hancock, R. D.; Howell, I. V.; Pitkethly, R. C.; Robinson, P. J.
 CORPORATE SOURCE: BP Res. Cent., Br. Pet. Co. Ltd., Sunbury-on-Thames/Middlesex, UK
 SOURCE: Catal., Proc. Int. Symp. (1975), Meeting Date 1974, 361-71. Editor(s): Delmon, B.; Jannes, G. Elsevier: Amsterdam, Neth.
 CODEN: 31OYAM
 DOCUMENT TYPE: Conference
 LANGUAGE: English
 AB Macromol. complexes formed from Rh bonded to the surface of silica containing P, N, and S donor ligands were used as hydroformylation catalysts for 1-hexene under mild temperature and pressure conditions. Complexes with P ligand-silicas gave aldehydes as well as 2-, and 3-hexene. Complexes with N ligand-silicas gave alcs. as well as aldehydes. The complex linked to silica via S had low hydroformylation activity. Treatment of the ligand-silica with a silylating agent reduced the number of SiOH groups on the silica surface as well as the extent of α -olefin isomerization under severe reaction conditions.
 CC 23-14 (Aliphatic Compounds)
 Section cross-reference(s): 67, 35, 22, 78
 IT 18586-39-5 58676-20-3
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with silica)
 IT 18586-39-5
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with silica)
 RN 18586-39-5 HCAPLUS
 CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



L57 ANSWER 16 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1976:121017 HCAPLUS
 DOCUMENT NUMBER: 84:121017
 TITLE: Supported transition metal complexes. III. Catalysts for the hydrogenation of olefins and dienes
 AUTHOR(S): Allum, K. G.; Hancock, R. D.; Howell, I. V.; Lester,

CORPORATE SOURCE: T. E.; McKenzie, S.; Pitkethly, R. C.; Robinson, P. J.
BP Res. Cent., Br. Pet. Co. Ltd., Sunbury-on-Thames/Middlesex, UK

SOURCE: Journal of Organometallic Chemistry (1976),
107(3), 393-405
CODEN: JORCAI; ISSN: 0022-328X

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Phosphine complexes of Rh, Ir, Ru, and Pt were chemically bonded to the surface of silica. These heterogeneous complexes catalyze the hydrogenation of olefins and dienes (e.g. 1-hexene) and most retain substantial hydrogenation activity in the presence of mercaptans. Variation of the phosphine and halide ligands in complexes MXP2 (M = Rh, Ir; X = halide; P = tertiary phosphine group linked to silica) has little effect on their hydrogenation activity in the presence of mercaptans.

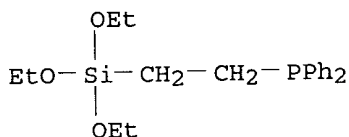
CC 23-2 (Aliphatic Compounds)
Section cross-reference(s): 29, 67

IT 7440-18-8D, Ruthenium, (diphenylphosphinoethyl)triethoxysilane complexes
18586-39-5D, Phosphine, diphenyl[2-(triethoxysilyl)ethyl]-, ruthenium complexes 58676-27-0 59244-85-8 59244-86-9 59244-87-0
59244-88-1 59244-89-2 59244-90-5 59390-45-3 59390-46-4
59390-47-5 59390-48-6
RL: CAT (Catalyst use); USES (Uses)
(catalysts, linked to silica, for hydrogenation of olefins and dienes)

IT 18586-39-5D, Phosphine, diphenyl[2-(triethoxysilyl)ethyl]-, ruthenium complexes
RL: CAT (Catalyst use); USES (Uses)
(catalysts, linked to silica, for hydrogenation of olefins and dienes)

RN 18586-39-5 HCAPLUS

CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



L57 ANSWER 17 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1976:105685 HCAPLUS

DOCUMENT NUMBER: 84:105685

TITLE: Stepwise addition of silanes and phosphines to α,ω -dienes. Approach to novel phosphine ligand anchoring reagents for silica

AUTHOR(S): Oswald, Alexis A.; Murrell, Lawrence L.; Boucher, Lawrence J.

CORPORATE SOURCE: Corp. Res. Lab., Esso Res. and Eng. Co., Linden, NJ, USA

SOURCE: Preprints - American Chemical Society, Division of Petroleum Chemistry (1974), 19(1), 155-61
CODEN: ACPCAT; ISSN: 0569-3799

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Silylalkylphosphine anchoring reagents for silica were prepared via sequential silane and phosphine addition to α,ω -dienes. Thus, hydrosilylation of $\text{H}_2\text{C}=\text{CH}(\text{CH}_2)_n\text{CH}=\text{CH}_2$ with R_3SiH gave 80-90% $\text{H}_2\text{C}=\text{CH}(\text{CH}_2)_n\text{CH}_2\text{CH}_2\text{SiR}_3$ (I) and $\text{R}_3\text{SiCH}_2\text{CH}_2(\text{CH}_2)_n\text{CH}_2\text{CH}_2\text{SiR}_3$ (SiR₃, n given):

SiMeCl₂, 6; SiCl₃, 4; Si(OEt)₃, 4; SiCl₃, 8. An excess of the diene reactant increased the selectivity to the monoadduct. Addition of R₁₂PH to I gave 46-95% R₁₂P(CH₂)_mSiR₃ (R₁ = Ph, R = Cl, OEt, OAc; R₁ = Pr, R = Cl).

CC 29-7 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 67

IT 4145-77-1P 5181-41-9P 13083-94-8P 52034-16-9P 52217-62-6P
52217-67-1P 52217-68-2P 52217-70-6P 58566-91-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

IT 4145-77-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 4145-77-1 HCAPLUS

CN Phosphine, diphenyl[2-(trichlorosilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)

Ph₂P-CH₂-CH₂-SiCl₃

L57 ANSWER 18 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1975:413208 HCAPLUS

DOCUMENT NUMBER: 83:13208

TITLE: Hydrogenating unsaturated compounds

INVENTOR(S): Pitkethly, Robert C.; McKenzie, Samuel; Allum, Keith G.

PATENT ASSIGNEE(S): British Petroleum Co. Ltd.

SOURCE: Brit., 17 pp.
CODEN: BRXXAA

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 1372189	A	19741030	GB 1970-47846	19711001 <--
PRIORITY APPLN. INFO.:			GB 1970-47846	A 19711001

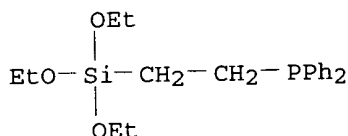
AB Hydrogenation catalysts for the conversion of alkenes to alkanes and dienes to alkenes, and for the treatment of steam cracked gasoline comprised transition metals bonded to P atoms of P-containing groups chemical linked to the surface of a particulate inorg. support, e.g. silica [7631-86-9] or alumina [1344-28-1], by chemical reactions of HO groups on the support surface. The catalysts are active in the absence and presence of mercaptan and thiophene S. They can be reused and are stabilized by contact with mercaptans, thiophene [110-02-1], thiophenol [108-98-5], and carbon disulfide [75-15-0]. Thus, (EtO)₃Si(CH₂)₂PPh₂ [18586-39-5] was added to cycloocta-1,5-diene rhodium chloride [[RhCl(C₈H₁₂)]₂] [12092-47-6], to give RhCl[(EtO)₃Si(CH₂)₂PPh₂]₃ [55465-37-7]. The complex was treated in C₆H₆ with silica to give a silica-bonded Rh catalyst containing 0.9 weight % Rh. Stirring 0.5 g catalyst in H-saturated heptane containing 25 ml 1-hexene [592-41-6] at 60° and 1 atm H gave a 50 weight % conversion with a 45 weight % selectivity to hexane [110-54-3].

IC C07C

CC 51-5 (Fossil Fuels, Derivatives, and Related Products)
Section cross-reference(s): 67

IT 111-78-4D, 1,5-Cyclooctadiene, iridium complex, reaction products with [(triethoxysilyl)ethyl]diphenylphosphine 931-88-4D, Cyclooctene, rhodium

complex, reaction products with [dihexylphosphino)ethyl]triethoxysilane
 12112-67-3D, Iridium, di- μ -chlorobis[(1,2,5,6- η)-1,5-
 cyclooctadiene]di-, reaction products with [(triethoxysilyl)ethyl]diphenyl
 phosphine 12279-09-3D, Rhodium, di- μ -chlorotetrakis[(1,2- η)-
 cyclooctene]di-, reaction products with [dihexylphosphino)ethyl]triethoxys
 ilane 18586-39-5D, Phosphine, diphenyl[2-(triethoxysilyl)ethyl]-
 , transition metal complexes 55120-19-9D, Phosphine,
 dihexyl[2-(triethoxysilyl)ethyl]-, reaction products with dicobalt
 octacarbonyl 55465-37-7
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts, for hydrogenation of alkenes)
 IT 18586-39-5D, Phosphine, diphenyl[2-(triethoxysilyl)ethyl]-,
 transition metal complexes
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts, for hydrogenation of alkenes)
 RN 18586-39-5 HCAPLUS
 CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX
 NAME)



L57 ANSWER 19 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1975:160726 HCAPLUS

DOCUMENT NUMBER: 82:160726

TITLE: Supported transition metal complexes. II. Silica as
 the support

AUTHOR(S): Allum, K. G.; Hancock, R. D.; Howell, I. V.; McKenzie,
 S.; Pitkethly, R. C.; Robinson, P. J.

CORPORATE SOURCE: BP Res. Cent., British Pet. Co., Ltd.,
 Sunbury-on-Thames/Middx., UK

SOURCE: Journal of Organometallic Chemistry (1975),
 87(2), 203-16

CODEN: JORCAI; ISSN: 0022-328X

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Liganding groups may be chemical bonded to SiO₂ by reaction of the surface
 silanols with mols. of the type RSiX₃, in which R is an organic group
 containing

a ligand atom and X is a hydrolysable group (e.g., OEt). Ligand-silicas,
 so formed, may be used to prepare transition metal complexes.
 Alternatively, complexes with a ligand containing a SiX₃ group may be prepared
 and subsequently bonded to the SiO₂ surface. The principles are
 illustrated by the preparation of some P, N, S, and O donor ligands and
 ligand-silicas. Carbonyl containing Rh complexes of these ligands are
 described.

CC 67-1 (Catalysis and Reaction Kinetics)
 Section cross-reference(s): 29

IT 18586-39-5 55120-19-9 55289-47-9 55289-48-0 55289-49-1

RL: RCT (Reactant); RACT (Reactant or reagent)

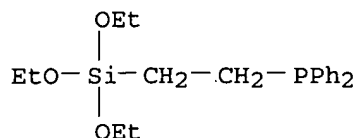
(reaction of, with silica in preparation of rhodium carbonyl catalysts)

IT 18586-39-5

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, with silica in preparation of rhodium carbonyl catalysts)

RN 18586-39-5 HCAPLUS
 CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



L57 ANSWER 20 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1974:121737 HCAPLUS

DOCUMENT NUMBER: 80:121737

TITLE: Nonlinear polymer as catalyst precursor and its use in a catalyst preparation

INVENTOR(S): Young, Frank Glynn

PATENT ASSIGNEE(S): Union Carbide Corp.

SOURCE: Ger. Offen., 46 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2330308	A1	19740103	DE 1973-2330308	19730614 <--
CA 1014967	A1	19770802	CA 1973-172561	19730524 <--
IT 985430	A	19741130	IT 1973-50709	19730612 <--
BE 800896	A1	19731214	BE 1973-132251	19730614 <--
NL 7308282	A	19731218	NL 1973-8282	19730614 <--
FR 2189463	A1	19740125	FR 1973-21694	19730614 <--
JP 49052194	A2	19740521	JP 1973-67330	19730614 <--

PRIORITY APPLN. INFO.: US 1972-263231 A 19720615

AB The preparation of phosphine-containing siloxane complexes of transition metals and

Pt-group metals, useful as heterogeneous catalysts in reactions such as silylation and hydroxylative dimerization of butadiene, is described. Thus, addition of 19.0 g triethoxyvinylsilane [78-08-0] and 1.92 g (Me₃CO)₂ to 18.6 g diphenylphosphine [829-85-6] stirred at 140.deg. and stirring 1 hr at 140-60.deg. give 24.7 g diphenyl[2-(triethoxysilyl)ethyl]phosphine (I) [18586-39-5]. Refluxing 37.6 g I, 2.08 g (EtO)₄Si, 100 ml HOAc, and 10 drops concentrated HCl 2 hr give 26 g polymer containing 11.04% P. Refluxing 2.003 g this polymer, 0.5363 g sodium chloropallidite [13820-53-6] tetrahydrate, and 80 ml EtOH 3 hr gives 2.2516 g polymer-Pd complex, useful as a reusable catalyst in the silylation of allyl chloride by SiHCl₃.

IC C07F; C07B; B01J; C08G

CC 36-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 29

IT 18586-39-5 52090-23-0

RL: USES (Uses)

(in siloxane metal complex catalysts manufacture)

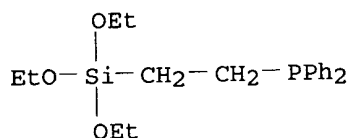
IT 18586-39-5 52090-23-0

RL: USES (Uses)

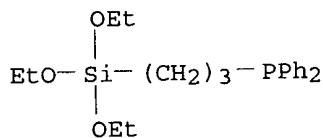
(in siloxane metal complex catalysts manufacture)

RN 18586-39-5 HCAPLUS

CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 52090-23-0 HCAPLUS
CN Phosphine, diphenyl[3-(triethoxysilyl)propyl]- (9CI) (CA INDEX NAME)



L57 ANSWER 21 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1974:83252 HCAPLUS
DOCUMENT NUMBER: 80:83252
TITLE: Silylhydrocarbylphosphines and related compounds
INVENTOR(S): Oswald, Alexis A.; Murrell, Lawrence L.
PATENT ASSIGNEE(S): esoo
SOURCE: Ger. Offen., 80 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 4
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2332167	A1	19740110	DE 1973-2332167	19730625 <--
DE 2332167	B2	19810619		
DE 2332167	C3	19820429		
US 3907852	A	19750923	US 1972-265507	19720623 <--
CA 1008460	A1	19770412	CA 1973-174243	19730618 <--
NL 7308749	A	19731227	NL 1973-8749	19730622 <--
FR 2189119	A1	19740125	FR 1973-22952	19730622 <--
FR 2189119	B1	19830204		
IT 990682	A	19750710	IT 1973-25762	19730622 <--
GB 1440801	A	19760630	GB 1973-29696	19730622 <--
JP 49055628	A2	19740530	JP 1973-71239	19730623 <--
JP 57015600	B4	19820331		
DE 2366357	C2	19821216	DE 1973-2366357	19730623
DE 2366359	C2	19840913	DE 1973-2366359	19730623
DE 2366397	C2	19870205	DE 1973-2366397	19730623
			US 1972-265507	A 19720623

PRIORITY APPLN. INFO.:

AB (Silylalkyl)phosphine complex catalysts for hydroformylation, carbonylation, Oxo, and hydrogenation reactions were prepared. Thus, 1,7-octadiene was treated with HSiCl₃ and the resulting CH₂:CH(CH₂)₆SiCl₃ treated with Ph₂PH to give Ph₂P(CH₂)₈SiCl₃. The phosphine was anchored on silica and treated with Rh(cO)Cl₂ to give [Ph₂P(CH₂)₈SiCl₃]₂Rh(cO)Cl.

IC C07F

CC 29-13 (Organometallic and Organometalloidal Compounds)
 Section cross-reference(s): 51

IT 4145-77-1P 5181-41-9P 13083-94-8P 18817-29-3P 51772-32-8P
 52034-13-6P 52034-14-7P 52034-15-8P 52034-16-9P 52034-17-0P
 52217-52-4P 52217-53-5P 52217-54-6P 52217-55-7P 52217-56-8P
 52217-57-9P 52217-58-0P 52217-59-1P 52217-60-4P 52217-61-5P
 52217-62-6P 52217-63-7P 52217-64-8P 52217-65-9P 52217-66-0P
 52217-67-1P 52217-68-2P 52217-69-3P 52217-70-6P 52217-71-7P
 52217-72-8P 52217-73-9P 52217-75-1P 52456-28-7P 52456-29-8P
 52456-30-1P 52456-31-2P 52490-84-3P 52563-02-7P 52563-03-8P
 52563-04-9P 52563-05-0P 52563-06-1P 52633-23-5P 52633-24-6P
 52633-25-7P 52633-26-8P 52633-27-9P 52633-28-0P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)

IT 4145-77-1P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)

RN 4145-77-1 HCAPLUS

CN Phosphine, diphenyl[2-(trichlorosilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)

Ph₂P-CH₂-CH₂-SiCl₃

L57 ANSWER 22 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1971:529339 HCAPLUS

DOCUMENT NUMBER: 75:129339

TITLE: Heterogeneous catalysts for hydroformylating olefins

INVENTOR(S): Allum, Keith G.; Hancock, Ronald D.; McKenzie, Samuel; Pitkethly, Robert C.

PATENT ASSIGNEE(S): British Petroleum Co. Ltd.

SOURCE: Ger. Offen., 20 pp.
 CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 2

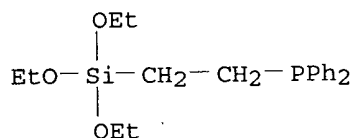
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2062352	A	19710624	DE 1970-2062352	19701218 <--
GB 1342877	A	19740103	GB 1970-56219	19691219 <--
US 3832404	A	19740827	US 1970-98030	19701214 <--
NL 7018322	A	19710622	NL 1970-18322	19701216 <--
FR 2073940	A5	19711001	FR 1970-45607	19701217 <--
JP 52024001	B4	19770628	JP 1970-113566	19701217 <--
PRIORITY APPLN. INFO.:			GB 1969-56219	A 19691219
			GB 1970-46614	A 19700930
			GB 1969-61920	A 19691219
			GB 1970-56219	A 19701120

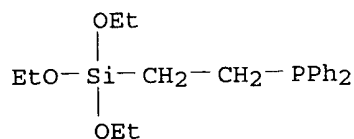
AB Preparation of the title catalysts, organometallic compds. containing Si, P, and Rh or Co is described. Thus, 69.6 g (EtO)₃SiCH₂CH₂ was added during 30 min to 80.4 g Ph₂PH under N and the mixture stirred 70 hr with uv irradiation to give 127 g (EtO)₃SiCH₂CH₂PPH₂ (I). To 3.8 g [RhCl(C₆H₅)₃]₂ in 100 ml C₆H₆ was added 17.4 g I in 10 ml C₆H₆, the solution stirred 16 hr under N, and the product heated 14 hr at 60°/10-4 mm pressure to give a viscous oil. This (6 g) was added, in 60 ml C₆H₆, to 50 g SiO₂ in 150 ml C₆H₆ and the

mixture refluxed 2 hr with azeotropic removal of EtOH to give a catalyst. Also prepared were several other catalysts including $\text{Co}_2(\text{CO})_8[(\text{EtO})_3\text{Si}(\text{CH}_2)_2\text{PPh}_2]_2$ and $\text{Rh}(\text{X})(\text{CO})[(\text{EtO})_3\text{Si}(\text{CH}_2)_2\text{PPh}_2]_n$ ($\text{X} = \text{H}, \text{BuS}, \text{Cl}; n = 2, 3$). The catalysts were used to hydroformylate 1-hexene.

IC C07C
CC 23 (Aliphatic Compounds)
IT 11060-39-2 **18586-39-5D**, Phosphine, diphenyl[2-(triethoxysilyl)ethyl]-, transition metal complexes 29965-97-7D, Cyclooctadiene, rhodium complexes 34420-27-4 34489-12-8
RL: CAT (Catalyst use); USES (Uses)
(catalysts, for hydroformylation of olefins)
IT **18586-39-5**
RL: CAT (Catalyst use); USES (Uses)
(catalysts, from rhodium complexes and, for hydroformylation of olefins)
IT **18586-39-5D**, Phosphine, diphenyl[2-(triethoxysilyl)ethyl]-, transition metal complexes
RL: CAT (Catalyst use); USES (Uses)
(catalysts, for hydroformylation of olefins)
RN 18586-39-5 HCAPLUS
CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



IT **18586-39-5**
RL: CAT (Catalyst use); USES (Uses)
(catalysts, from rhodium complexes and, for hydroformylation of olefins)
RN 18586-39-5 HCAPLUS
CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



L57 ANSWER 23 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1971:522751 HCAPLUS
DOCUMENT NUMBER: 75:122751
TITLE: Catalyst supports
INVENTOR(S): Allum, Keith G.; McKenzie, Samuel; Pitkethly, Robert C.
PATENT ASSIGNEE(S): British Petroleum Co. Ltd.
SOURCE: Ger. Offen., 33 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2062351	A	19710624	DE 1970-2062351	19701218 <--
GB 1342876	A	19740103	GB 1969-61920	19691219 <--
GB 1342877	A	19740103	GB 1970-56219	19691219 <--
US 3726809	A	19730410	US 1970-98031	19701214 <--
US 3832404	A	19740827	US 1970-98030	19701214 <--
NL 7018322	A	19710622	NL 1970-18322	19701216 <--
NL 7018453	A	19710622	NL 1970-18453	19701217 <--
JP 51012599	B4	19760420	JP 1970-113567	19701217 <--
FR 2071942	A5	19710924	FR 1970-45824	19701218 <--
FR 2071942	B1	19750704		

PRIORITY APPLN. INFO.:

GB 1969-61920	A	19691219
GB 1970-46614	A	19700930
GB 1970-56219	A	19701120

GI For diagram(s), see printed CA Issue.

AB The preparation and application of catalysts consisting of a matrix containing trivalent P and transition metal atoms bound to the P are described. The catalyst matrix, prepared from inorg. solid matter containing OH groups, especially

silica gel, and a phosphorus compound, contains units of structure I, where R1, R2, R3, and R4 are aryl or alkyl radicals with ≤ 10 C atoms and R1 or R2 or both are also aryloxy or alkoxy radicals. R is a C1-20 divalent organic radical. The catalysts are used for hydration, isomerization, and acetoxylation of olefins, oligomerization of dienes, and polymerization and cyclooligomerization of acetylenes.

IC B01J

CC 67 (Catalysis and Reaction Kinetics)

IT 18586-39-5D, Phosphine, diphenyl[2-(triethoxysilyl)ethyl]-, transition metal complexes

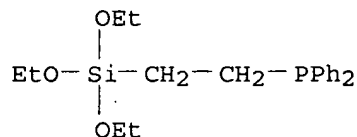
RL: CAT (Catalyst use); USES (Uses)
(catalysts, for reactions of olefins)

IT 18586-39-5D, Phosphine, diphenyl[2-(triethoxysilyl)ethyl]-, transition metal complexes

RL: CAT (Catalyst use); USES (Uses)
(catalysts, for reactions of olefins)

RN 18586-39-5 HCAPLUS

CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



L57 ANSWER 24 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1965:498594 HCAPLUS

DOCUMENT NUMBER: 63:98594

ORIGINAL REFERENCE NO.: 63:18154f-h

TITLE: Organosilicon compounds containing phosphorus

INVENTOR(S): Owen, William J.; Saunders, Frederick C.

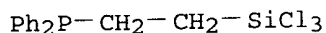
PATENT ASSIGNEE(S): Midland Silicones Ltd.

SOURCE: 4 pp.

DOCUMENT TYPE: Patent

LANGUAGE: Unavailable
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	GB 1007333		19651013	GB	19610530 <--
AB	The title compds. were prepared by adding secondary phosphines to silanes or siloxanes containing an olefinic group. A solution of 0.3 g. azobis(isobutyronitrile) in 80.6 g. CH ₂ :CHSiMeCl ₂ was added over 6 hrs. to 92.7 g. Ph ₂ PH kept at 100°. Distillation of the reaction product yielded 118.5 g. Ph ₂ PCH ₂ CH ₂ SiMeCl ₂ (I), b. 140-53°/0.08-0.35 mm. Also prepared was Ph ₂ PCH ₂ CH ₂ SiCl ₃ , b. 159-60°. Heating 48 g. I with 64 g. S to 200° for 30 min. gave Ph ₂ P(S)CH ₂ CH ₂ SiMeCl ₂ , m. 97-100°. Hydrolysis of I gave a polymeric material which itself was oxidized with 30% H ₂ O ₂ . By hydrolyzing a mixture of I and Me ₂ SiCl ₂ and equilibrating the product with hexamethyldisiloxane in the presence of KOH, another polymer was formed, which in turn was oxidized with H ₂ O ₂ . Heating Me ₂ SiClCH ₂ CH ₂ PPh ₂ with S gave Me ₂ SiClCH ₂ CH ₂ P(S)Ph ₂ (II), m. 95-6°. II was hydrolyzed to give [Ph ₂ P(S)CH ₂ CH ₂ SiMe ₂] 2O, which on heating with octamethylcyclotetrasiloxane yielded a polymer.				
IC	C07F				
CC	39 (Organometallic and Organometalloidal Compounds)				
IT	4145-76-0, Phosphine, [2-(dichloromethylsilyl)ethyl]diphenyl- 4145-77-1, Phosphine, diphenyl[2-(trichlorosilyl)ethyl]- 4145-78-2, Phosphine sulfide, [2-(dichloromethylsilyl)ethyl]diphenyl- 4145-79-3, Phosphine sulfide, [2-(chlorodimethylsilyl)ethyl]diphenyl- (preparation of)				
IT	4145-77-1, Phosphine, diphenyl[2-(trichlorosilyl)ethyl]- (preparation of)				
RN	4145-77-1 HCAPLUS				
CN	Phosphine, diphenyl[2-(trichlorosilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)				



L57 ANSWER 25 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1962:410931 HCAPLUS

DOCUMENT NUMBER: 57:10931

ORIGINAL REFERENCE NO.: 57:2247b-e

TITLE: Synthesis of organophosphorous-substituted silanes and polysiloxanes

AUTHOR(S): Niebergall, Heinz

CORPORATE SOURCE: Battelle Inst., Frankfurt, Germany

SOURCE: Makromolekulare Chemie (1962), 52, 218-29

CODEN: MACEAK; ISSN: 0025-116X

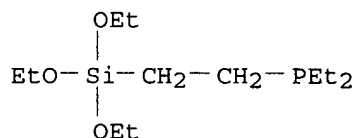
DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

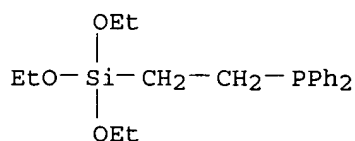
AB R₂PH (I), R₂P(S)H (II), and R₂P(O)H (III) could be added readily and nearly quant, across the ethylenic double bond of alkenylsilanes. The addition reaction, performed in a N atmospheric did not require a solvent and was catalyzed by ultraviolet (UV) or free radical catalysts. Thus, 2.1 g. Me₂Si(CH:CH₂)₂ and 3.4 g. Et₂PH (IV) were weighed under N into a quartz tube which had been flushed with N. The reaction mixture was then illuminated with UV. Because of the exothermic nature of the reaction the light intensity was moderate initially, and was increased as the reaction

progressed. The reaction was complete after 24-8 hrs., and after fractional distn, the product was obtained as an oil in 96% yield. Other reactants and yields were: Me₂Si(CH₂CH:CH₂)₂, Ph₂PH, 97%; (CH₂:CH)₄Si, IV, 95%; (CH₂:CH)₄Si, Ph₂PH, 62%; (MeO)₂Si(CH₂CH:CH₂)₂, IV, 87%; (EtO)₃SiCH:CH₂, IV, 98%; Cl₂PhSiCH:CH₂, (Ph)₂PH, 96%; Cl₂PhSiCH:CH₂, IV, 94%; Cl₂Si(CH:CH₂)₂, IV, 71%; (EtO)₃SiCH:CH₂, Et₂P(S)H, 94%. The addnl, products derived from I underwent reactions characteristic of tertiary phosphines. Addition products of alkenyl alkoxysilanes and alkenyl chlorosilanes could be hydrolyzed and condensed to P-containing polysiloxanes. These polymers also resulted from addition of I, II, and III to polyalkenyl polysiloxanes.

- CC 33 (Organometallic and Organometalloidal Compounds)
 IT 17907-55-0, Phosphine, [(dimethylsilylene)diethylene]bis[diethyl-
 18026-53-4, Phosphine, (1,2-diphenylethyl)diphenyl- 18037-05-3,
 Phosphine, [2-(dichlorophenylsilyl)ethyl]diethyl- 18082-96-7, Phosphine
 sulfide, diethyl[2-(triethoxysilyl)ethyl]- 18082-97-8,
 Phosphine, diethyl[2-(triethoxysilyl)ethyl]- 18388-75-5, Phosphine,
 [(dichlorosilylene)diethylene]bis[diethyl- 18536-31-7, Phosphine,
 [(dimethylsilylene)bis(trimethylene)]bis[diethyl- 18546-96-8, Phosphine,
 [(dimethoxysilylene)bis(trimethylene)]bis[diethyl- 18586-39-5,
 Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- 18758-32-2, Phosphine,
 [(dimethylsilylene)bis(trimethylene)]bis[diphenyl- 18825-61-1, Silane,
 tetrakis[2-(diphenylphosphino)ethyl]- 18867-11-3, Silane,
 tetrakis[2-(diethylphosphino)ethyl]- 88065-78-5, Phosphine oxide,
 propylenebis[diphenyl-
 (preparation of)
 IT 18082-97-8, Phosphine, diethyl[2-(triethoxysilyl)ethyl]-
 18586-39-5, Phosphine, diphenyl[2-(triethoxysilyl)ethyl]-
 (preparation of)
 RN 18082-97-8 HCAPLUS
 CN Phosphine, diethyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX
 NAME)



- RN 18586-39-5 HCAPLUS
 CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX
 NAME)



L57 ANSWER 26 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1962:60687 HCAPLUS
 DOCUMENT NUMBER: 56:60687
 ORIGINAL REFERENCE NO.: 56:11622a-d
 TITLE: Organic compounds containing phosphorus and silicon
 INVENTOR(S): Niebergall, Heinz

PATENT ASSIGNEE(S): Koppers Co., Inc.
 DOCUMENT TYPE: Patent
 LANGUAGE: Unavailable
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 1118781		19591212	DE 1959-N16250	19590212 <--
GB 925721			GB	

AB Phosphines, phosphine sulfides, and phosphine oxides added to the double bonds of unsatd. silanes. The reaction took place without catalysts, but free radical forming compds., ultraviolet light and tertiary amines catalyzed the reaction. Ethers and saturated hydrocarbons were solvents. Et₂PH (15.2 g.) and 10.13 g. Me₂Si(CH:CH₂)₂ were irradiated 30 hrs. with ultraviolet light under N. Distillation yielded 20.2 g. (Et₂P-CH₂CH₂)₂SiMe₂,

b3 155-60°. The following compds. were prepared (compound, b.p./mm., and % yield given): (Et₂PCH₂-CH₂)₂SiCl₂, 139-40.5°/2, 85; Me₂Si[(CH₂)₃Pet₂]₂, 170-1°/4, 97; (EtO)₃SiCH₂CH₂Pet₂, 123-4°/10, 98; [Et₂P(CH₂)₃-Si(OCH₃)₂]₂, 182-4°/3, 79; (EtO)₃SiCH₂CH₂P(S)Et₂, 145-8°/2, 100; (EtO)₃SiCH₂CH₂P(S)Et₂, 137-40°/2, 87; Me₃Si-(CH₂)₁₂Pet₂, -, 100; (EtO)₃SiCH₂CH₂Pet₂, 178-9°/2, 78. 5; Et₂PCH₂CH₂Si(Ph)Cl₂, 126-7.5°/2, 85; [Ph₂-PCH₂CH₂]₄Si, - [m. 208-11° (benzene)], 58; [Et₂PCH₂-CH₂]₄Si, 224.5-28°/2, 91; a product from (CH₂:CHCH₂)₄Si and Ph₂PH, -, -; from Me₃SiCMe:CHMe and Et₂Ph, -, -; from PhCH:CHSiEt₃ and Et₂PH, -, -. The compds. were useful as biocides, textile auxiliaries, stabilizers, inhibitors, lubricants, lubricant additives, hydraulic oils, anti-foams, plasticizers, vulcanization promoters, and for hydrophobing and flame proofing. Cf. U.S. 2,843,615. (CA 53, 1147d.

INCL 120

CC 33 (Organometallic and Organometalloidal Compounds)

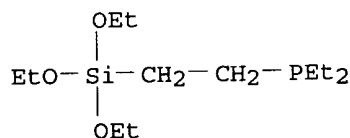
IT 17907-55-0, Phosphine, [(dimethylsilylene)diethylene]bis[diethyl-18037-05-3, Phosphine, [2-(dichlorophenylsilyl)ethyl]diethyl-18082-96-7, Phosphine sulfide, diethyl[2-(triethoxysilyl)ethyl]-18082-97-8, Phosphine, diethyl[2-(triethoxysilyl)ethyl]-18388-75-5, Phosphine, [(dichlorosilylene)diethylene]bis[diethyl-18536-31-7, Phosphine, [(dimethylsilylene)bis(trimethylene)]bis[diethyl-18546-96-8, Phosphine, [(dimethoxysilylene)bis(trimethylene)]bis[diethyl-18678-69-8, Phosphine, diethyl[12-(trimethylsilyl)dodecyl]-18825-61-1, Silane, tetrakis[2-(diphenylphosphino)ethyl]-18867-11-3, Silane, tetrakis[2-(diethylphosphino)ethyl]-

(preparation of)

IT 18082-97-8, Phosphine, diethyl[2-(triethoxysilyl)ethyl]- (preparation of)

RN 18082-97-8 HCAPLUS

CN Phosphine, diethyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



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DICTIONARY FILE UPDATES: 4 SEP 2006 HIGHEST RN 905816-92-4

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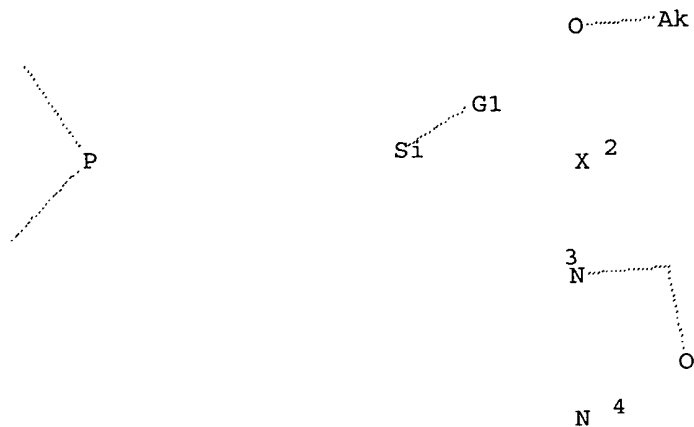
FILE COVERS 1907 - 5 Sep 2006 VOL 145 ISS 11
FILE LAST UPDATED: 4 Sep 2006 (20060904/ED)

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L3 STR



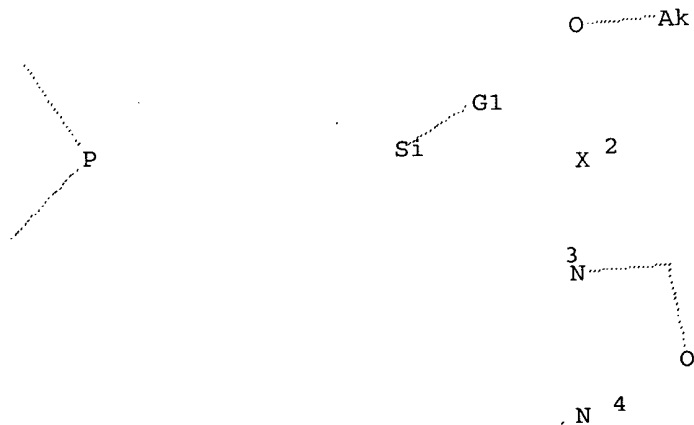
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Structure attributes must be viewed using STN Express query preparation.

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L7	899826	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	COPPER/BI
L11	28	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L6 AND L7

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L3 STR



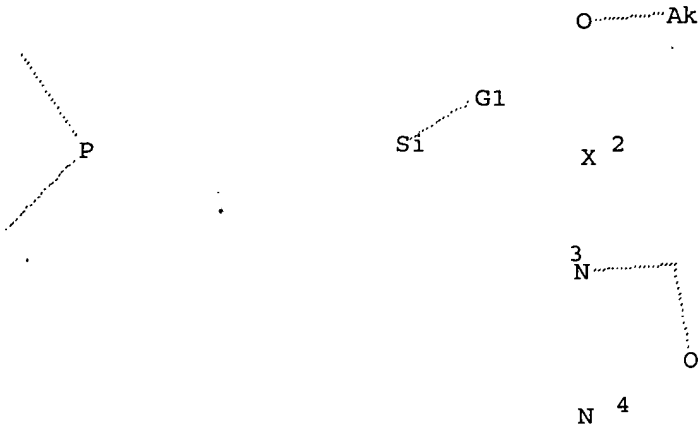
G1 [@1], [@2], [@3], [@4]

Structure attributes must be viewed using STN Express query preparation.

L5	1205	SEA	FILE=REGISTRY	SSS	FUL	L3
L6	875	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	L5
L8	3025	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	UNDERCOAT/OBI OR UNDER COAT/OBI
L9	5861	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	(UNDERCOAT OR UNDER COAT)/BI
L10	1247390	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	FILM?/BI
L12	15	SEA	FILE=HCAPLUS	ABB=ON	PLU=ON	(L8 OR L9 OR L10) AND L6

=> d stat que L23

L3 STR



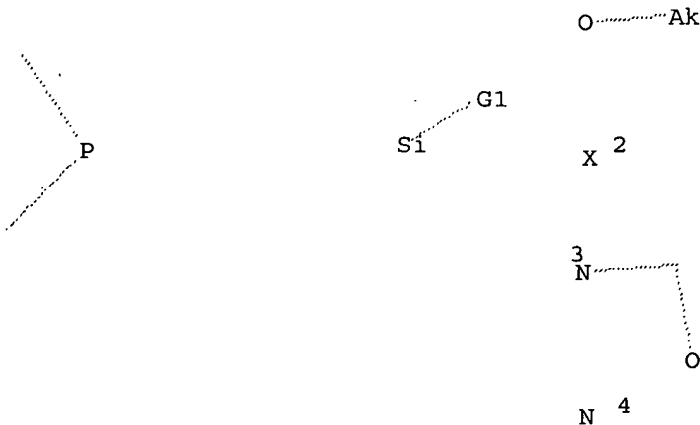
G1 [@1], [@2], [@3], [@4]

Structure attributes must be viewed using STN Express query preparation.

L5 1205 SEA FILE=REGISTRY SSS FUL L3
 L6 875 SEA FILE=HCAPLUS ABB=ON PLU=ON L5
 L22 QUE ABB=ON PLU=ON 76/SC,CC,SX
 L23 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L6 AND L22

=> d stat que L24

L3 STR



G1 [@1], [@2], [@3], [@4]

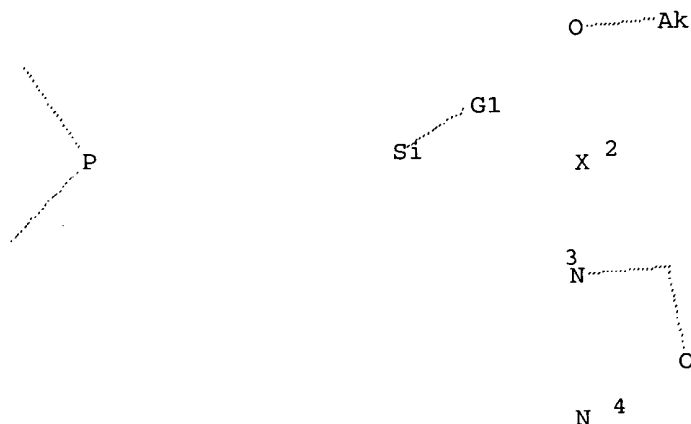
Structure attributes must be viewed using STN Express query preparation.

L5 1205 SEA FILE=REGISTRY SSS FUL L3
 L6 875 SEA FILE=HCAPLUS ABB=ON PLU=ON L5

L19 576565 SEA FILE=HCAPLUS ABB=ON PLU=ON (SEMICONDUCTOR# OR SEMI
CONDUCTOR#)/BI
L24 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L19 AND L6

=> d stat que L29

L3 STR



G1 [@1], [@2], [@3], [@4]

Structure attributes must be viewed using STN Express query preparation.

L5 1205 SEA FILE=REGISTRY SSS FUL L3
L6 875 SEA FILE=HCAPLUS ABB=ON PLU=ON L5
L28 QUE ABB=ON PLU=ON VAPOR DEPOSIT?/BI
L29 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L6 AND L28

=> s (L11 or L12 or L23 or L24 or L29) not (L56 or L57)

L58 43 (L11 OR L12 OR L23 OR L24 OR L29) NOT (L56 OR L57)

=> d ibib abs hitind hitstr L58 1-43

L58 ANSWER 1 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2006:593436 HCAPLUS
DOCUMENT NUMBER: 145:210458
TITLE: New Mechanistic Insights Regarding Pd/Cu Catalysts for
the Sonogashira Reaction: HRMAS NMR Studies of
Silica-Immobilized Systems
AUTHOR(S): Posset, Tobias; Bluemel, Janet
CORPORATE SOURCE: Organic Chemistry Department, University of
Heidelberg, Heidelberg, 69120, Germany
SOURCE: Journal of the American Chemical Society (2006),
128(26), 8394-8395
CODEN: JACSAT; ISSN: 0002-7863
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The title technique, high-resolution magic angle spinning NMR of suspensions,
constitutes a powerful new tool for investigating the structures and
mobilities of immobilized species and, thus, for optimizing

*printed with author
search*

*printed with
Registry number
search*

heterobimetallic catalyst systems, such as the Sonogashira coupling of terminal alkynes and aryl halides.

CC 22-4 (Physical Organic Chemistry)

ST palladium **copper** catalyst Sonogashira reaction silica immobilized system

IT Coupling reaction
Coupling reaction catalysts
(Sonogashira; palladium/**copper** catalysts for Sonogashira reaction)

IT NMR (nuclear magnetic resonance)
(magic-angle-spinning; palladium/**copper** catalysts for Sonogashira reaction)

IT Polymer-supported reagents
(palladium/**copper** catalysts for Sonogashira reaction)

IT 13965-03-2
RL: CAT (Catalyst use); USES (Uses)
(palladium/**copper** catalysts for Sonogashira reaction)

IT 904704-25-2DP, silica-bound 904704-26-3DP, silica-bound
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(palladium/**copper** catalysts for Sonogashira reaction)

IT 536-74-3, Ethynylbenzene 591-50-4, Iodobenzene
RL: RCT (Reactant); RACT (Reactant or reagent)
(palladium/**copper** catalysts for Sonogashira reaction)

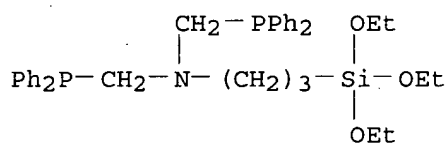
IT 904704-23-0DP, silica-bound 904704-27-4P
RL: RGT (Reagent); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(palladium/**copper** catalysts for Sonogashira reaction)

IT 501-65-5P, Diphenylacetylene
RL: SPN (Synthetic preparation); PREP (Preparation)
(palladium/**copper** catalysts for Sonogashira reaction)

IT 904704-23-0DP, silica-bound
RL: RGT (Reagent); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(palladium/**copper** catalysts for Sonogashira reaction)

RN 904704-23-0 HCAPLUS

CN INDEX NAME NOT YET ASSIGNED



REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 2 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:567366 HCAPLUS

DOCUMENT NUMBER: 143:240726

TITLE: Metal "Capture" by a Heterotrimetalloligand, Heterometallic d10-d10 Interactions, and Unexpected Iron-to-Platinum Silyl Ligand Migration: a Combined Experimental and Theoretical Study

AUTHOR(S): Schuh, Walter; Braunstein, Pierre; Benard, Marc; Rohmer, Marie-Madeleine; Welter, Richard

CORPORATE SOURCE: Laboratoire de Chimie de Coordination, UMR 7513 CNRS, Universite Louis Pasteur, Strasbourg, F-67070, Fr.

SOURCE: Journal of the American Chemical Society (2005),
127(29), 10250-10258
CODEN: JACSAT; ISSN: 0002-7863

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 143:240726

AB The heterotrinuclear chain complex $\text{Hg}\{\text{Fe}\{\text{Si}(\text{OMe})_3\}(\text{CO})_3(\text{dppm-P})\}_2$ (1, $\text{dppm} = \text{Ph}_2\text{PCH}_2\text{PPh}_2$), which has a transoid arrangement of the phosphine donors, was used as a versatile chelating metallodiphosphine ligand owing to the easy rotation of its metal core about the Fe-Hg σ -bonds. Its reaction with the labile Pt(0) olefin complex $[\text{Pt}(\text{C}_7\text{H}_{10})_3]$ yielded $[\text{HgPt}\{\text{Si}(\text{OMe})_3\}\text{Fe}_2(\text{CO})_6\{\text{Si}(\text{OMe})_3\}(\mu\text{-dppm})_2]$ (5) which resulted, after coordination of the dangling phosphine donors to Pt, from an unprecedented intramol. rearrangement involving a very rare example of silyl ligand migration between two different metal centers, and the 1st one in metal cluster chemical. The major structural differences observed between the heterometallic complexes obtained from 1 and d10 Cu(I), Pd(0), or Pt(0) precursors were established by x-ray diffraction. The bonding situation in the silyl migrated Pt complex 5 was analyzed and compared to those in the isoelectronic, but structurally distinct complexes obtained from Cu(I) and Pd(0) precursors, $[\text{Hg}\{\text{Fe}\{\text{Si}(\text{OMe})_3\}(\text{CO})_3(\mu\text{-dppm})\}_2\text{Cu}]^+$ (2) and $[\text{Hg}\{\text{Fe}\{\text{Si}(\text{OMe})_3\}(\text{CO})_3(\mu\text{-dppm})\}_2\text{Pd}]$ (4), resp., by extended Huckel interaction diagrams. DFT calcns. then allowed the energy min. associated with the three structures to be compared for 2, 4, and 5. All three min. are in close competition for the Pd complex 4, but silyl migration is favored by .apprx.10 kcal mol⁻¹ for 5, mainly due to the more electroneg. character of Pt with respect to Pd.

CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75

IT Conformation
(DFT calcns. of electronic structure of mercury iron **copper** /palladium/platinum trihydroxysilyl diphosphinomethane carbonyl heterotetranuclear cluster complexes)

IT Frontier molecular orbital
(EHMO calcns. of electronic structure of mercury iron **copper** /palladium/platinum trimethoxysilyl bis(diphenylphosphino)methane carbonyl heterotetranuclear cluster complexes)

IT Energy level
(correlation diagram; EHMO calcns. of electronic structure of mercury iron **copper**/palladium/platinum trimethoxysilyl bis(diphenylphosphino)methane carbonyl heterotetranuclear cluster complexes)

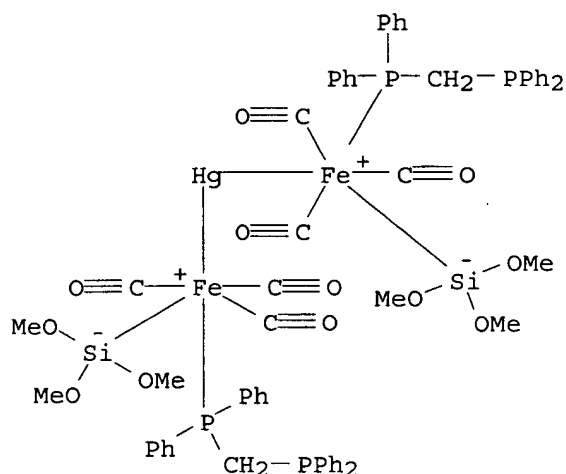
IT Molecular structure
(optimized; DFT calcns. of electronic structure of mercury iron **copper**/palladium/platinum trihydroxysilyl diphosphinomethane carbonyl heterotetranuclear cluster complexes)

IT 57158-98-2, Tris(norbornene)platinum 142563-99-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of mercury platinum iron trimethoxysilyl bis(diphenylphosphino)methane carbonyl heterotetranuclear cluster complex from intramol. rearrangement and iron-to-platinum silyl migration)

IT 142563-99-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of mercury platinum iron trimethoxysilyl bis(diphenylphosphino)methane carbonyl heterotetranuclear cluster complex from intramol. rearrangement and iron-to-platinum silyl migration)

RN 142563-99-3 HCAPLUS

CN Iron, hexacarbonylbis[[(diphenylphosphino)methyl]diphenylphosphine- κ P](mercury)bis(trimethoxysilyl)di-, (2Fe-Hg), stereoisomer (9CI)
(CA INDEX NAME)



REFERENCE COUNT: 68 THERE ARE 68 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 3 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:1057 HCAPLUS

DOCUMENT NUMBER: 142:102843

TITLE: Method for producing quantum dot silicate thin film for light emitting device

INVENTOR(S): Yim, Jin Heong; Jang, Eun Joo; Ahn, Tae Kyung

PATENT ASSIGNEE(S): Samsung Electronics Co., Ltd., S. Korea

SOURCE: U.S. Pat. Appl. Publ., 15 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

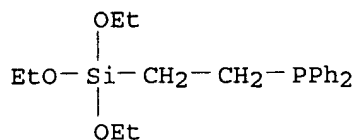
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004266148	A1	20041230	US 2003-734230	20031215
US 6869864	B2	20050322		
KR 2005003548	A	20050112	KR 2003-42448	20030627
JP 2005039251	A2	20050210	JP 2004-188289	20040625
CN 1577906	A	20050209	CN 2004-10062068	20040628

PRIORITY APPLN. INFO.: KR 2003-42448 A 20030627

AB A method for producing a quantum dot silicate film is described entailing displacing the surface of semiconductor quantum dots having a size of 1100 nm and synthesized by a wet chemical technique with a silane compound having a phosphine-, amine- or thiol-based functional group and at least one reactive group for a subsequent sol-gel process; subjecting the surface-displaced quantum dots to the sol-gel process, followed by coating onto a substrate, or coating the surface-displaced quantum dots onto a substrate, followed by subjecting them to the sol-gel process; and heat-treating the coated substrate. A quantum dot silicate film produced by the method is also described.

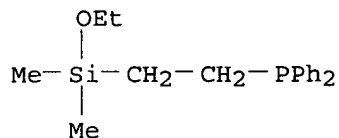
IC ICM H01L021-00

INCL 438497000
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 66, 76
 ST quantum dot silicate **film** LED fabrication
 IT Electroluminescent devices
 Films
 Quantum dot devices
 Semiconductor device fabrication
 Sol-gel processing
 (method for producing quantum dot silicate **film** for light emitting device)
 IT Silicates, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (method for producing quantum dot silicate **film** for light emitting device)
 IT 1306-23-6, Cadmium sulfide (CdS), uses 1306-24-7, Cadmium selenide (CdSe), uses 1306-25-8, Cadmium telluride (CdTe), uses 1314-98-3, Zinc sulfide (ZnS), uses 1315-09-9, Zinc selenide (ZnSe) 1315-11-3, Zinc telluride (ZnTe) 12068-90-5, Mercury telluride (HgTe)
 RL: TEM (Technical or engineered material use); USES (Uses)
 (quantum dot; method for producing quantum dot silicate **film** for light emitting device)
 IT 919-30-2, 3-Aminopropyltriethoxysilane 3069-29-2 3179-76-8, 3-Aminopropylmethyldiethoxysilane 4420-74-0, 3-Mercaptopropyltrimethoxysilane 13822-56-5, 3-Aminopropyltrimethoxysilane 14814-09-6, 3-Mercaptopropyltriethoxysilane 14858-33-4, Mercaptomethylmethyldimethoxysilane 18306-79-1, 3-Aminopropyldimethylethoxysilane **18586-39-5**, 2-Diphenylphosphinoethyltriethoxysilane 31001-77-1, 3-Mercaptopropylmethyldimethoxysilane 71550-66-8 202980-99-2 **359859-29-3**
 RL: RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)
 (silicate **film** on quantum dot; method for producing quantum dot silicate **film** for light emitting device)
 IT 1344-28-1, Alumina, uses 7440-21-3, Silicon, uses 7631-86-9, Silica, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (substrate; method for producing quantum dot silicate **film** for light emitting device)
 IT 93236-49-8
 RL: RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)
 (substrate; method for producing quantum dot silicate **film** for light emitting device)
 IT **18586-39-5**, 2-Diphenylphosphinoethyltriethoxysilane **359859-29-3**
 RL: RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)
 (silicate **film** on quantum dot; method for producing quantum dot silicate **film** for light emitting device)
 RN 18586-39-5 HCAPLUS
 CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 359859-29-3 HCAPLUS

CN Phosphine, [2-(ethoxydimethylsilyl)ethyl]diphenyl- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 4 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:629834 HCAPLUS

DOCUMENT NUMBER: 141:295646

TITLE: Stereospecific and stereodivergent construction of quaternary carbon centers through switchable directed/nondirected allylic substitution

AUTHOR(S): Breit, Bernhard; Demel, Peter; Studie, Christopher

CORPORATE SOURCE: Institut fuer Organische Chemie und Biochemie, Albert-Ludwigs-Universitaet Freiburg, Freiburg, 79104, Germany

SOURCE: Angewandte Chemie, International Edition (2004), 43(29), 3786-3789

CODEN: ACIEF5; ISSN: 1433-7851

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 141:295646

AB Selectivity at the flick of a switch: Through 1,3-chirality transfer, a directing/nondirecting leaving group facilitated the stereospecific and stereodivergent construction of quaternary carbon centers by **copper**-mediated allylic substitution with Grignard or organozinc reagents. The use of the corresponding phosphane oxide led to selective anti substitution.

CC 24-5 (Alicyclic Compounds)

ST alkenyl ester Grignard reagent allylic substitution **copper**; dialkylalkene stereoselective prepn; **copper** stereoselective allylic substitution mediator

IT Substitution reaction

(allylic, stereoselective; regio- and stereoselective preparation of dialkylalkenes via oxidation of alkenyl diphenylphosphinobenzoates followed by **copper**-mediated asym. allylic substitution with dialkylzinc)

IT Asymmetric synthesis and induction

(regio- and stereoselective preparation of dialkylalkenes via oxidation of alkenyl diphenylphosphinobenzoates followed by **copper**-mediated asym. allylic substitution with dialkylzinc)

IT Grignard reagents

RL: RCT (Reactant); RACT (Reactant or reagent)

- (regio- and stereoselective preparation of dialkylalkenes via oxidation of alkenyl diphenylphosphinobenzoates followed by **copper**-mediated asym. allylic substitution with dialkylzinc)
- IT Alkenes, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(regio- and stereoselective preparation of dialkylalkenes via oxidation of alkenyl diphenylphosphinobenzoates followed by **copper**-mediated asym. allylic substitution with dialkylzinc)
- IT 1589-82-8 2259-30-5 763084-96-4 **763085-01-4**
763085-02-5 763085-16-1 763085-17-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(regio- and stereoselective preparation of dialkylalkenes via **copper**-mediated stereoselective allylic substitution of alkenyl esters with Grignard reagents)
- IT 763085-05-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(regio- and stereoselective preparation of dialkylalkenes via **copper**-mediated stereoselective allylic substitution of alkenyl esters with Grignard reagents)
- IT 7787-70-4, **Copper**(I)bromide
RL: RGT (Reagent); RACT (Reactant or reagent)
(regio- and stereoselective preparation of dialkylalkenes via **copper**-mediated stereoselective allylic substitution of alkenyl esters with Grignard reagents)
- IT 70689-88-2P 763084-99-7P 763085-04-7P 763085-06-9P 763085-07-0P
763085-08-1P 763085-09-2P 763085-10-5P 763085-11-6P 763085-12-7P
763085-20-7P 763085-21-8P 763085-22-9P 763085-23-0P 763085-24-1P
763085-25-2P 763085-26-3P 763085-27-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(regio- and stereoselective preparation of dialkylalkenes via **copper**-mediated stereoselective allylic substitution of alkenyl esters with Grignard reagents)
- IT 625-81-0, Diisopropylzinc 1119-90-0, Dibutylzinc
RL: RCT (Reactant); RACT (Reactant or reagent)
(regio- and stereoselective preparation of dialkylalkenes via oxidation of alkenyl diphenylphosphinobenzoates followed by **copper**-mediated asym. allylic substitution with dialkylzinc)
- IT 763085-03-6P 763085-18-3P 763085-19-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(regio- and stereoselective preparation of dialkylalkenes via oxidation of alkenyl diphenylphosphinobenzoates followed by **copper**-mediated asym. allylic substitution with dialkylzinc)
- IT 544-92-3, **Copper**(I) cyanide
RL: RGT (Reagent); RACT (Reactant or reagent)
(regio- and stereoselective preparation of dialkylalkenes via oxidation of alkenyl diphenylphosphinobenzoates followed by **copper**-mediated asym. allylic substitution with dialkylzinc)
- IT 763085-13-8P 763085-14-9P 763085-15-0P 763085-29-6P 763085-30-9P
763085-31-0P 764657-32-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(regio- and stereoselective preparation of dialkylalkenes via oxidation of alkenyl diphenylphosphinobenzoates followed by **copper**-mediated asym. allylic substitution with dialkylzinc)
- IT 693-03-8, Butylmagnesium bromide 763084-97-5 763084-98-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(regioselective preparation of dialkylalkenes via **copper**-mediated allylic substitution of alkenyl esters with Grignard reagents)
- IT 62008-16-6P 62008-17-7P 69747-29-1P

RL: SPN (Synthetic preparation); PREP (Preparation)
(regioselective preparation of dialkylalkenes via **copper**-mediated allylic substitution of alkenyl esters with Grignard reagents)

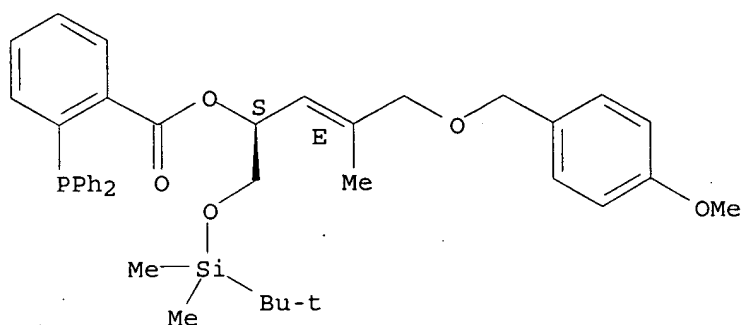
IT 763085-01-4 763085-02-5

RL: RCT (Reactant); RACT (Reactant or reagent)
(regio- and stereoselective preparation of dialkylalkenes via **copper**-mediated stereoselective allylic substitution of alkenyl esters with Grignard reagents)

RN 763085-01-4 HCAPLUS

CN Benzoic acid, 2-(diphenylphosphino)-, (1S,2E)-1-[[[(1,1-dimethylethyl)dimethylsilyl]oxy]methyl]-4-[(4-methoxyphenyl)methoxy]-3-methyl-2-butenyl ester (9CI) (CA INDEX NAME)

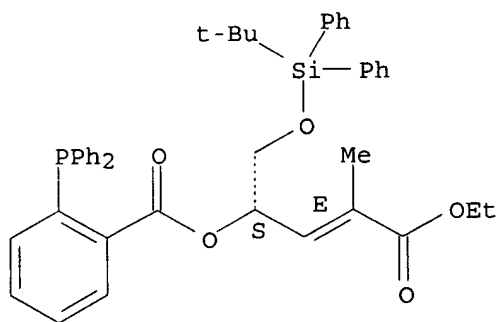
Absolute stereochemistry. Rotation (-).
Double bond geometry as shown.



RN 763085-02-5 HCAPLUS

CN Benzoic acid, 2-(diphenylphosphino)-, (1S,2E)-1-[[[(1,1-dimethylethyl)diphenylsilyl]oxy]methyl]-4-ethoxy-3-methyl-4-oxo-2-butenyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).
Double bond geometry as shown.



REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 5 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:601316 HCAPLUS

DOCUMENT NUMBER: 141:302166

TITLE: A general one-pot process leading to highly functionalized ordered mesoporous silica films

AUTHOR(S): Cagnol, F.; Grosso, D.; Sanchez, C.

CORPORATE SOURCE: Laboratoire de Chimie de la Matiere Condensee UMR
7574, Universite Pierre et Marie Curie, Paris, 75252,
Fr.

SOURCE: Chemical Communications (Cambridge, United Kingdom)
(2004), (15), 1742-1743
CODEN: CHCOFS; ISSN: 1359-7345

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 141:302166

AB Various organic moieties are homogeneously introduced in high quantities into
mesostructured porous silica **films** through a general
co-condensation process, which influences the self-assembly mechanism,
depending on the physico-chemical properties of each function.

CC 66-6 (Surface Chemistry and Colloids)
Section cross-reference(s): 38, 78

ST synthesis functionalized ordered mesoporous silica **film** surface
structure

IT Porous materials
(mesoporous; one-pot synthesis of organic functionalized ordered
mesoporous silica **film**)

IT **Films**
(one-pot synthesis of organic functionalized ordered mesoporous silica
film)

IT Surface structure
(one-pot synthesis of organic functionalized ordered mesoporous silica
film and its)

IT 113923-94-7P 161000-64-2P 167637-55-0P 172417-80-0P
190083-88-6P 245427-90-1P 251902-32-6P 301190-05-6P
764664-51-9P 764664-52-0P 764664-53-1P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(one-pot synthesis of organic functionalized ordered mesoporous silica
film)

IT 78-10-4 780-69-8 919-30-2 1067-25-0 4420-74-0 21142-29-0
24801-88-5 27326-65-4 49539-88-0 **52090-23-0** 71783-41-0
80906-67-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(one-pot synthesis of organic functionalized ordered mesoporous silica
film)

IT 57-09-0, Cetyltrimethylammonium bromide
RL: NUU (Other use, unclassified); USES (Uses)
(template; one-pot synthesis of organic functionalized ordered mesoporous
silica **film**)

IT **190083-88-6P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(one-pot synthesis of organic functionalized ordered mesoporous silica
film)

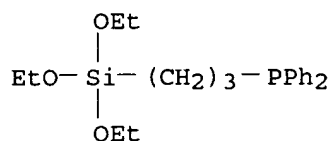
RN 190083-88-6 HCAPLUS

CN Silicic acid (H₄SiO₄), tetraethyl ester, polymer with diphenyl[3-
(triethoxysilyl)propyl]phosphine (9CI) (CA INDEX NAME)

CM 1

CRN 52090-23-0

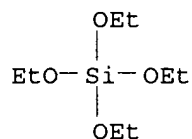
CMF C21 H31 O3 P Si



CM 2

CRN 78-10-4

CMF C8 H20 O4 Si

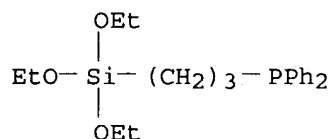


IT 52090-23-0

RL: RCT (Reactant); RACT (Reactant or reagent)
 (one-pot synthesis of organic functionalized ordered mesoporous silica
film)

RN 52090-23-0 HCAPLUS

CN Phosphine, diphenyl[3-(triethoxysilyl)propyl]- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 6 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:550324 HCAPLUS

DOCUMENT NUMBER: 141:115177

TITLE: Material for forming underlaying **film**
 beneath **copper** interconnection of
semiconductor device

INVENTOR(S): Mikami, Noboru; Machida, Hideaki

PATENT ASSIGNEE(S): Mitsubishi Electric Corp., Japan; Tri Chemical
 Laboratory Inc.

SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

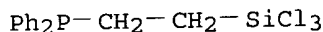
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

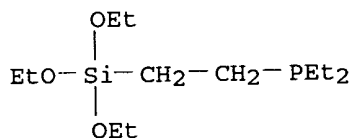
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004193342	A2	20040708	JP 2002-359525	20021211
US 2004137726	A1	20040715	US 2003-732798	20031211

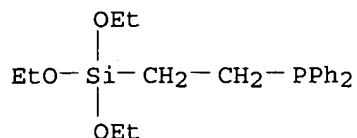
US 7022606 B2 20060404 JP 2002-359525 A 20021211
 PRIORITY APPLN. INFO.:
 OTHER SOURCE(S): MARPAT 141:115177
 AB The title material comprises a compound represented by (R1R2)P-(R)n-Si(X1X2X3) (X1-3 = hydrolyzable group; R1,2 = alkyl; R = alkylene, aromatic ring, etc.; and n = integer 1-6). The compound may include 1-diphenylphosphino-2-triethoxysilylethane, etc. The underlaying **film** containing the compound was able to prevent the diffusion of Cu from the Cu interconnection and exhibited excellent adhesion with the Cu interconnection.
 IC ICM H01L021-312
 ICS H01L021-3205
 CC 76-3 (Electric Phenomena)
 ST underlaying **film copper** interconnection
 IT **semiconductor** device
 IT Interconnections, electric
 Semiconductor devices
 (material for forming underlaying **film** beneath **copper** interconnection of **semiconductor** device)
 IT 7440-50-8, **Copper**, uses
 RL: DEV (Device component use); USES (Uses)
 (interconnection; material for forming underlaying **film** beneath **copper** interconnection of **semiconductor** device)
 IT 4145-77-1 18082-97-8 18586-39-5
 52090-23-0 88000-44-6 101409-18-1
 106636-91-3 180590-61-8 719300-31-9
 719300-32-0 719300-33-1 719300-34-2
 719300-35-3
 RL: DEV (Device component use); USES (Uses)
 (material for forming underlaying **film** beneath **copper** interconnection of **semiconductor** device)
 IT 4145-77-1 18082-97-8 18586-39-5
 52090-23-0 88000-44-6 101409-18-1
 106636-91-3 180590-61-8 719300-31-9
 719300-32-0 719300-33-1 719300-34-2
 719300-35-3
 RL: DEV (Device component use); USES (Uses)
 (material for forming underlaying **film** beneath **copper** interconnection of **semiconductor** device)
 RN 4145-77-1 HCAPLUS
 CN Phosphine, diphenyl[2-(trichlorosilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



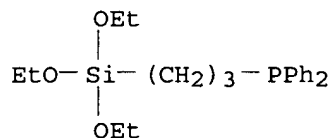
RN 18082-97-8 HCAPLUS
 CN Phosphine, diethyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



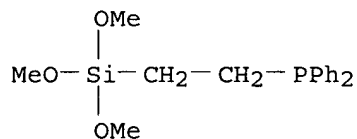
RN 18586-39-5 HCAPLUS
CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



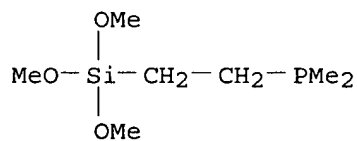
RN 52090-23-0 HCAPLUS
CN Phosphine, diphenyl[3-(triethoxysilyl)propyl]- (9CI) (CA INDEX NAME)



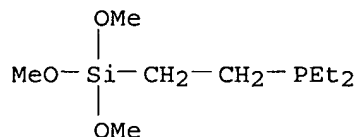
RN 88000-44-6 HCAPLUS
CN Phosphine, diphenyl[2-(trimethoxysilyl)ethyl]- (9CI) (CA INDEX NAME)



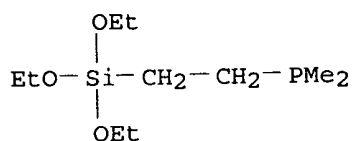
RN 101409-18-1 HCAPLUS
CN Phosphine, dimethyl[2-(trimethoxysilyl)ethyl]- (9CI) (CA INDEX NAME)



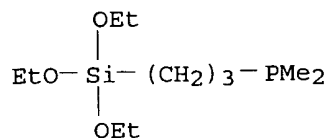
RN 106636-91-3 HCAPLUS
CN Phosphine, diethyl[2-(trimethoxysilyl)ethyl]- (9CI) (CA INDEX NAME)



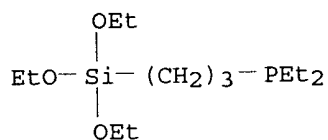
RN 180590-61-8 HCAPLUS
CN Phosphine, dimethyl[2-(triethoxysilyl)ethyl]- (9CI) (CA INDEX NAME)



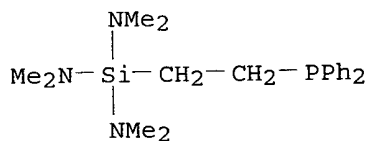
RN 719300-31-9 HCAPLUS
 CN Phosphine, dimethyl[3-(triethoxysilyl)propyl]- (9CI) (CA INDEX NAME)



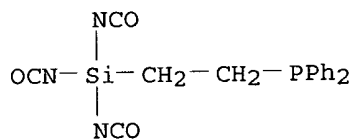
RN 719300-32-0 HCAPLUS
 CN Phosphine, diethyl[3-(triethoxysilyl)propyl]- (9CI) (CA INDEX NAME)



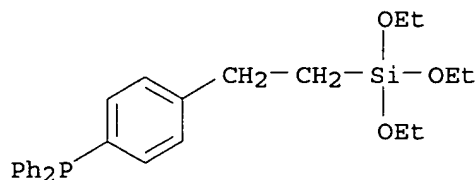
RN 719300-33-1 HCAPLUS
 CN Silanetriamine, 1-[2-(diphenylphosphino)ethyl]-N,N,N',N',N'',N'''-hexamethyl- (9CI) (CA INDEX NAME)



RN 719300-34-2 HCAPLUS
 CN Phosphine, diphenyl[2-(triisocyanatosilyl)ethyl]- (9CI) (CA INDEX NAME)

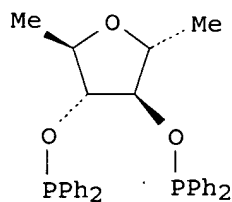


RN 719300-35-3 HCAPLUS
 CN Phosphine, diphenyl[4-[2-(triethoxysilyl)ethyl]phenyl]- (9CI) (CA INDEX NAME)



L58 ANSWER 7 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2004:177965 HCAPLUS
 DOCUMENT NUMBER: 140:235900
 TITLE: Preparation of chiral diphosphines and their transition metal complexes and their use in asymmetric synthesis
 INVENTOR(S): Meseguer, Benjamin; Militzer, Hans-Christian; Castillon, Sergio; Claver, Carmen; Diaz, Yolanda; Aghmiz, Mohamed; Guiu, Esther; Aghmiz, Ali; Masdeu, Anna
 PATENT ASSIGNEE(S): Bayer A.-G., Germany
 SOURCE: Ger. Offen., 34 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10241256	A1	20040304	DE 2002-10241256	20020906
EP 1400527	A1	20040324	EP 2003-18221	20030811
EP 1400527	B1	20060322		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
AT 321059	E	20060415	AT 2003-18221	20030811
US 2005080047	A1	20050414	US 2003-643552	20030819
JP 2004161741	A2	20040610	JP 2003-208112	20030820
CN 1493576	A	20040505	CN 2003-158087	20030821
PRIORITY APPLN. INFO.:			DE 2002-10238115	IA 20020821
			DE 2002-10241256	A 20020906
OTHER SOURCE(S):			CASREACT 140:235900; MARPAT 140:235900	
GI				



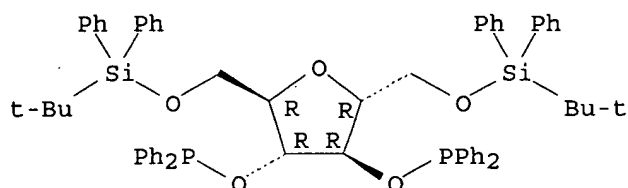
I

AB The present invention concerns the preparation of chiral diphosphines their transition metal complexes, and use of complexes in asym. syntheses.

Thus, preparation of 2,3-bis-O-(diphenylphosphino)-1,6-dideoxy-2,5-anhydro-D-mannitol I, prepared from 1,6-dideoxy-2,5-anhydro-D-mannitol, and [Rh(cod)2]BF4/I catalyzed enantioselective hydrogenation of CH2:C(NHAc)(CO2Me) is described.

- IC ICM C07F015-00
ICS C07F009-655; C07F009-6574; C07B053-00; B01J031-12; B01J031-24;
C07D307-93
- CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 23, 25, 33, 67
- IT 1287-13-4, Bis(cyclopentadienyl)ruthenium 1295-35-8,
Bis(1,5-cyclooctadiene)nickel 3375-31-3, Palladium diacetate
7447-39-4, **Copper** dichloride, uses 7647-10-1, Palladium
dichloride 7681-65-4, **Copper**(I) iodide 7758-89-6,
Copper(I) chloride 7787-70-4, **Copper**(I) bromide
7789-45-9, **Copper** dibromide 10049-07-7, Rhodium trichloride
10049-08-8, Ruthenium trichloride 12092-45-4 12092-47-6 12112-67-3
12257-42-0 12279-09-3 13444-94-5, Palladium dibromide 13767-71-0,
Copper diiodide 14024-61-4 14221-01-3,
Tetrakis(triphenylphosphine)palladium 14284-93-6 14874-82-9
15418-29-8, Tetrakis(acetonitrile)**copper** tetrafluoroborate
15596-82-4, Nickel trichloride 21503-87-7 33039-66-6 33056-12-1
34946-82-2, **Copper**(II) triflate 36620-11-8 37366-09-9
38816-56-7 42152-44-3, **Copper**(I) triflate 47814-88-0
48107-17-1 50982-12-2, (Cyclooctadiene)ruthenium dichloride
51364-51-3, Tris(dibenzylideneacetone)dipalladium 52462-29-0
52462-31-4 56678-59-2 59420-05-2 60576-58-1 62793-31-1
64443-05-6, Tetrakis(acetonitrile)**copper** hexafluorophosphate
70471-95-3 88492-76-6 90721-05-4 99326-34-8 130296-28-5
134001-83-5 171615-75-1 177843-11-7 178397-71-2 207728-97-0
404573-66-6 413621-65-5 474364-94-8 540513-60-8 540513-62-0
540513-64-2 540513-66-4 540513-68-6 666826-12-6 666826-14-8
666826-16-0 666826-18-2 666826-20-6 666826-24-0
RL: CAT (Catalyst use); USES (Uses)
(preparation of chiral diphosphines and its transition metal complexes and
their use in asym. synthesis)
- IT 666825-72-5P 666825-73-6P 666825-74-7P 666825-75-8P
666825-76-9P 666825-77-0P 666826-00-2P
666826-02-4P 666826-05-7P 666826-06-8P
666826-22-8P 666826-33-1P
RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation of chiral diphosphines and its transition metal complexes and
their use in asym. synthesis)
- IT 666825-73-6P 666825-76-9P 666826-00-2P
666826-02-4P 666826-05-7P 666826-06-8P
666826-22-8P 666826-33-1P
RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation of chiral diphosphines and its transition metal complexes and
their use in asym. synthesis)
- RN 666825-73-6 HCAPLUS
- CN D-Mannitol, 2,5-anhydro-1,6-bis-O-[(1,1-dimethylethyl)diphenylsilyl]-,
bis(diphenylphosphinite) (9CI) (CA INDEX NAME)

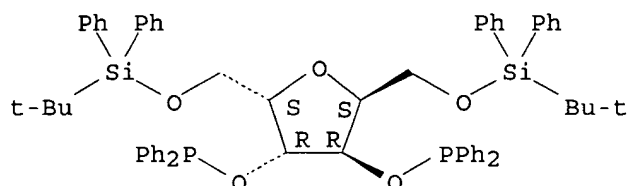
Absolute stereochemistry. Rotation (+).



RN 666825-76-9 HCAPLUS

CN L-Iditol, 2,5-anhydro-1,6-bis-O-[(1,1-dimethylethyl)diphenylsilyl]-, bis(diphenylphosphinite) (9CI) (CA INDEX NAME)

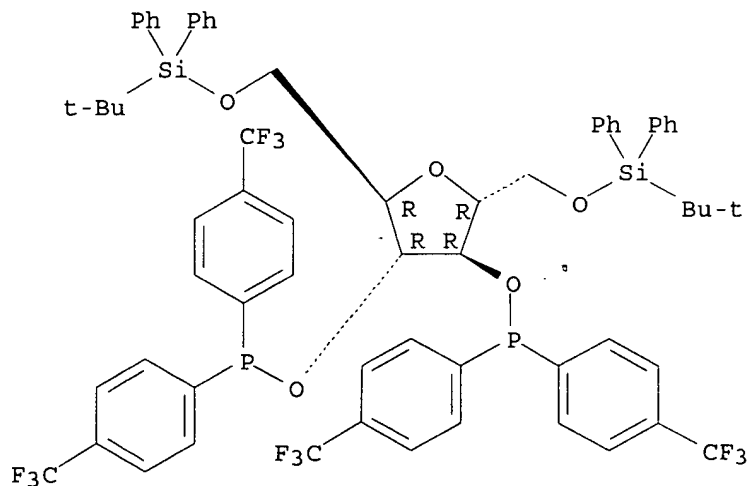
Absolute stereochemistry. Rotation (-).



RN 666826-00-2 HCAPLUS

CN D-Mannitol, 2,5-anhydro-1,6-bis-O-[(1,1-dimethylethyl)diphenylsilyl]-, bis[bis[4-(trifluoromethyl)phenyl]phosphinite] (9CI) (CA INDEX NAME)

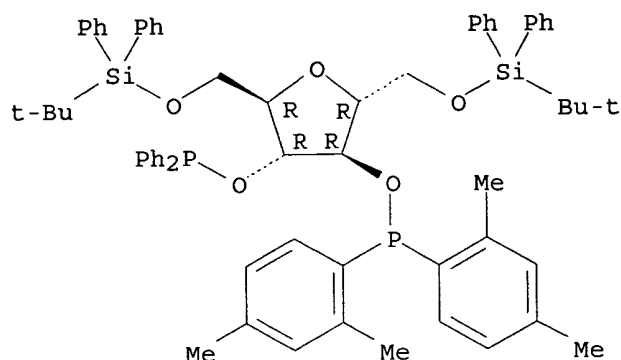
Absolute stereochemistry.



RN 666826-02-4 HCAPLUS

CN D-Mannitol, 2,5-anhydro-1,6-bis-O-[(1,1-dimethylethyl)diphenylsilyl]-, 3-[bis(2,4-dimethylphenyl)phosphinite] 4-(diphenylphosphinite) (9CI) (CA INDEX NAME)

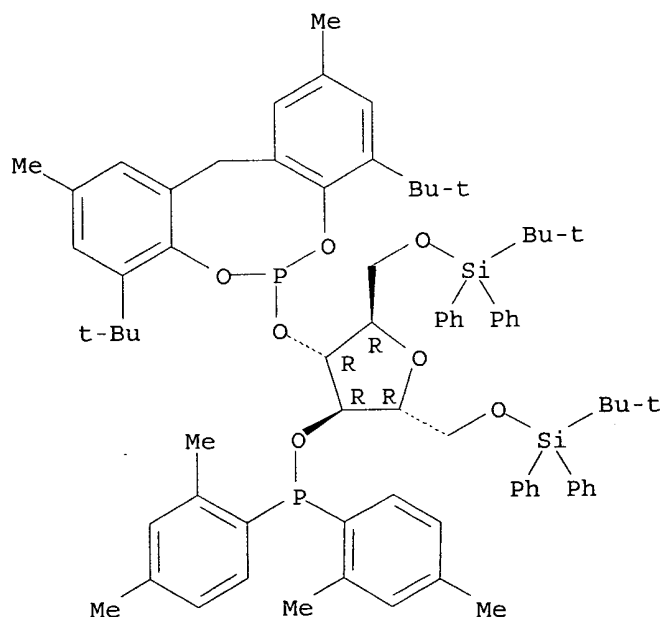
Absolute stereochemistry.



RN 666826-05-7 HCAPLUS

CN D-Mannitol, 2,5-anhydro-3-O-[4,8-bis(1,1-dimethylethyl)-2,10-dimethyl-12H-dibenzo[d,g][1,3,2]dioxaphosphocin-6-yl]-1,6-bis-O-[(1,1-dimethylethyl)diphenylsilyl]-, 4-[bis(2,4-dimethylphenyl)phosphinite]
(9CI) (CA INDEX NAME)

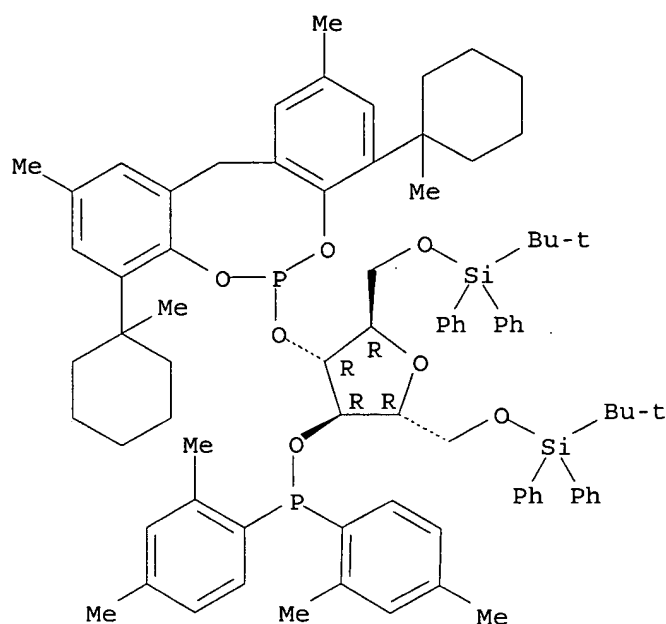
Absolute stereochemistry. Rotation (+).



RN 666826-06-8 HCAPLUS

CN D-Mannitol, 2,5-anhydro-3-O-[2,10-dimethyl-4,8-bis(1-methylcyclohexyl)-12H-dibenzo[d,g][1,3,2]dioxaphosphocin-6-yl]-1,6-bis-O-[(1,1-dimethylethyl)diphenylsilyl]-, 4-[bis(2,4-dimethylphenyl)phosphinite]
(9CI) (CA INDEX NAME)

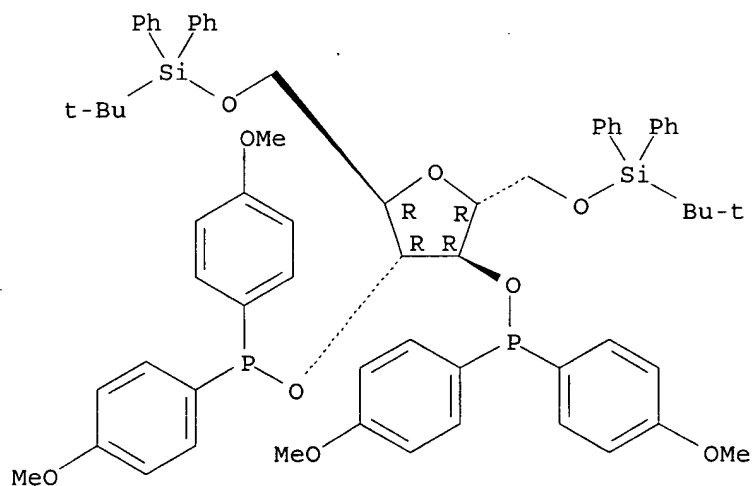
Absolute stereochemistry. Rotation (+).



RN 666826-22-8 HCAPLUS

CN D-Mannitol, 2,5-anhydro-1,6-bis-O-[(1,1-dimethylethyl)diphenylsilyl]-, bis[bis(4-methoxyphenyl)phosphinite] (9CI) (CA INDEX NAME)

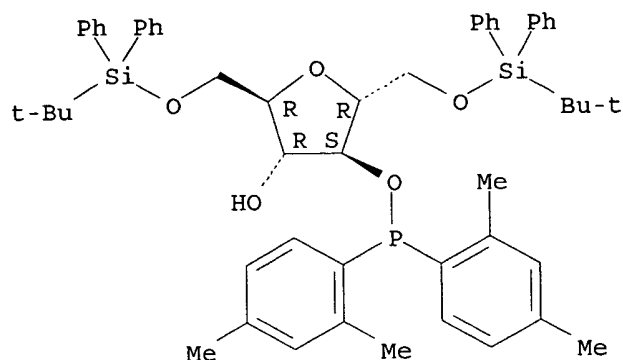
Absolute stereochemistry. Rotation (+).



RN 666826-33-1 HCAPLUS

CN D-Mannitol, 2,5-anhydro-1,6-bis-O-[(1,1-dimethylethyl)diphenylsilyl]-, 3-[bis(2,4-dimethylphenyl)phosphinite] (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L58 ANSWER 8 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:59031 HCAPLUS

DOCUMENT NUMBER: 141:146102

TITLE: Anchoring selenido-carbonyl ruthenium clusters to functionalized silica xerogels

AUTHOR(S): Cauzzi, Daniele; Graiff, Claudia; Pattacini, Roberto; Predieri, Giovanni; Tiripicchio, Antonio

CORPORATE SOURCE: Dipartimento di Chimica Generale ed Inorganica, Chimica Analitica, Chimica Fisica, Universita di Parma, Parma, 43100, Italy

SOURCE: Journal of the Brazilian Chemical Society (2003), 14(6), 908-913

CODEN: JOCSET; ISSN: 0103-5053

PUBLISHER: Sociedade Brasileira de Quimica

DOCUMENT TYPE: Journal

LANGUAGE: English

AB SiO₂ xerogels containing carbonyl Ru₃Se₂ nido clusters were prepared in 3 different ways. The simple dispersion of [Ru₃(μ₃-Se)₂(CO)₇(PPh₃)₂] via sol gel process produces an inhomogeneous material; by contrast, homogeneous xerogels were obtained by reaction of [Ru₃(μ₃-Se)₂(CO)₈(PPh₃)] with functionalized xerogels containing grafted diphenylphosphine moieties and by reaction of [Ru₃(CO)₁₂] with a xerogel containing grafted phosphine-selenide groups. The reaction between [Ru₃(CO)₁₂] and dodecyldiphenylphosphine selenide gave 4 selenido carbonyl clusters, which are soluble in hydrocarbon solvents and can be deposited as thin **films** from their solution by slow evaporation

CC 66-3 (Surface Chemistry and Colloids)

IT 681-84-5, Tmos 18586-39-5, Diphenyl[2-(triethoxysilyl)ethyl]phosphine

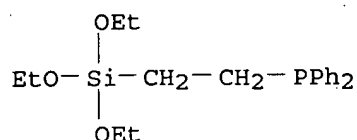
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of functionalized silica xerogels)

IT 18586-39-5, Diphenyl[2-(triethoxysilyl)ethyl]phosphine

RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of functionalized silica xerogels)

RN 18586-39-5 HCAPLUS

CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 9 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:997121 HCAPLUS

DOCUMENT NUMBER: 140:137074

TITLE: Robust self-assembled monolayer as diffusion barrier for **copper** metalization

AUTHOR(S): Mikami, Noboru; Hata, Nobuhiro; Kikkawa, Takamaro; Machida, Hideaki

CORPORATE SOURCE: Association of Super-Advanced Electronics Technology (ASET), MIRAI, Tsukuba, Ibaraki, 305-8569, Japan

SOURCE: Applied Physics Letters (2003), 83(25), 5181-5183

CODEN: APPLAB; ISSN: 0003-6951

PUBLISHER: American Institute of Physics

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Excellent results on **copper** (Cu) diffusion barrier characteristics of a self-assembled monolayer (SAM) of 2-(diphenylphosphino)ethyltriethoxy-silane are reported. The thickness and roughness of the SAM were determined by grazing incidence x-ray reflectometry as 1.7 and 0.3 nm, resp. To evaluate Cu diffusion barrier performance of the SAM, Cu/SiO₂/Si and Cu/SAM/SiO₂/Si MOS capacitors were prepared to measure their lifetimes under the 2 MV/cm elec. bias at 498-548 K. The mean times to failure obtained from the Weibull plots of time to failures were 33.6, 9.24, 4.57, and 2.03 h at 498, 523, 533 and 548 K, resp. These values show that the barrier characteristic of the SAM of 1.7 nm in thickness is comparable to that of phys.-**vapor-deposited Ta film** of 20 nm in thickness. The estimated lifetime of the SAM barrier at the device operation temperature of 392 K is longer than 10 yr.

CC 76-2 (Electric Phenomena)

ST self assembly monolayer diffusion barrier **copper** metalization

IT Electric contacts
(metalization; robust self-assembled monolayer as diffusion barrier for **copper** metalization)

IT Diffusion barrier
Interconnections, electric
Self-assembled monolayers
(robust self-assembled monolayer as diffusion barrier for **copper** metalization)

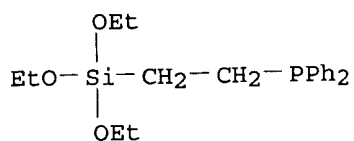
IT 18586-39-5, 2-(Diphenylphosphino)ethyltriethoxysilane
RL: TEM (Technical or engineered material use); USES (Uses)
(monolayers; robust self-assembled monolayer as diffusion barrier for **copper** metalization)

IT 7440-50-8, **Copper**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(robust self-assembled monolayer as diffusion barrier for **copper** metalization)

IT 18586-39-5, 2-(Diphenylphosphino)ethyltriethoxysilane
RL: TEM (Technical or engineered material use); USES (Uses)
(monolayers; robust self-assembled monolayer as diffusion barrier for

copper metalization)

RN 18586-39-5 HCAPLUS
 CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 10 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2003:836324 HCAPLUS
 DOCUMENT NUMBER: 139:311901
 TITLE: Process for preparing reactive compositions for fluid treatment
 INVENTOR(S): Hughes, Kenneth D.
 PATENT ASSIGNEE(S): Watervisions International, Inc., USA
 SOURCE: U.S. Pat. Appl. Publ., 19 pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003196960	A1	20031023	US 2002-125072	20020417
US 6833075	B2	20041221		
WO 2003089113	A1	20031030	WO 2003-US11960	20030417
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003222624	A1	20031103	AU 2003-222624	20030417
PRIORITY APPLN. INFO.:			US 2002-125072	A 20020417
			WO 2003-US11960	W 20030417
AB	A method and device for filtration and/or purification of fluids, including water or other solns. containing microbiol. and chemical contaminants, such as fluids containing metals, water treatment chems., reactive chems. and microorganisms, where the fluid is passed through a composite material composed of fluid treatment media with or without a binder matrix in which the filtration media, binder, or support structures, or a combination thereof contains a surface treatment. The composite material may be regenerated by sterilization, wherein the sterilization comprises exposing the composite material to elevated temperature, pressure, radiation levels, chemical oxidants or reductants, or combinations thereof.			
IC	ICM C02F001-28			
INCL	210670000; 210681000			

- CC 61-5 (Water)
Section cross-reference(s): 35, 56
- IT 7439-89-6, Iron, uses 7439-96-5, Manganese, uses 7440-06-4, Platinum, uses 7440-16-6, Rhodium, uses 7440-22-4, Silver, uses 7440-50-8, **Copper**, uses 7440-57-5, Gold, uses 7440-66-6, Zinc, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(as reduced metal; process for preparing reactive composites for fluid treatment by filtration)
- IT 75-01-4D, Vinylchloride, functionalized 79-10-7D, Acrylic acid, functionalized 100-42-5D, Styrene, functionalized 471-34-1, Calcium carbonate, uses 546-93-0, Magnesium carbonate 1305-62-0, Calcium hydroxide, uses 1305-78-8, Calcium oxide, uses 1309-42-8, Magnesium hydroxide 1309-48-4, Magnesium oxide, uses 1310-14-1, Goethite 1314-13-2, Zinc oxide, uses 1317-57-3, Glauconite 1317-60-8, Hematite, uses 1321-74-0D, Divinylbenzene, functionalized 1332-37-2, Iron oxide, uses 1335-30-4, Aluminum silicate 1343-88-0, Magnesium silicate 1344-28-1, Aluminum oxide, uses 1344-69-0, **Copper** hydroxide 1344-70-3, **Copper** oxide 1344-95-2, Calcium silicate 7631-86-9, Silicon oxide, uses 7757-93-9 7758-87-4 7779-90-0, Zinc phosphate 7784-09-0, Silver phosphate 7784-30-7, Aluminum phosphate 7790-76-3 10043-83-1, Magnesium phosphate 10103-46-5, Calcium phosphate 10103-48-7, **Copper** phosphate 10124-54-6, Manganese phosphate 10290-71-8, Iron carbonate 10402-24-1, Iron phosphate 11113-66-9, Iron hydroxide 11129-60-5, Manganese oxide 11129-61-6, Manganese silicate 12022-37-6, Lepidocrocite 12134-66-6, Maghemite 12173-10-3, Clinoptilolite 12396-03-1D, Octaphosphoric acid, calcium salts 12673-39-1, Iron silicate 13463-67-7, Titanium oxide, uses 13477-39-9, Calcium metaphosphate 13765-95-2, Zirconium phosphate 14455-29-9, Aluminum carbonate 14808-60-7, Quartz, uses 14854-26-3, Pyrolusite 18358-13-9D, Methacrylate, functionalized 21645-51-2, Aluminum hydroxide, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(process for preparing reactive composites for fluid treatment by filtration)
- IT 75-94-5, Vinyltrichlorosilane 78-08-0, Vinyltriethoxysilane 107-37-9, Allyltrichlorosilane 1067-47-6, 3-Cyanopropyltriethoxysilane 1071-27-8, 3-Cyanopropyltrichlorosilane 1558-25-4, Chloromethyltrichlorosilane 1760-24-3, N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane 2530-83-8, 3-Glycidoxypentyltrimethoxysilane 2530-87-2, 3-Chloropropyl-trimethoxysilane 2550-04-1, Allyltriethoxysilane 2550-06-3, 3-Chloropropyltrichlorosilane 2551-83-9, Allyltrimethoxysilane 2768-02-7, Vinyltrimethoxysilane 3085-30-1, Aluminum butoxide 4130-08-9, Vinyltriacetoxysilane 4325-85-3, Tris(trimethylsiloxy)boron 4369-14-6, 2-Propenoic acid, 3-(trimethoxysilyl)propyl ester 4420-74-0, 3-Mercaptopropyltrimethoxysilane 9002-98-6 10497-05-9, Tris(trimethylsilyl)phosphate 13688-90-9, (p-Chloromethyl)phenyltrichlorosilane 13822-56-5, 3-Aminopropyltrimethoxy silane 13883-39-1, 3-Bromopropyl trichlorosilane 14782-75-3, Aluminum, [ethyl 3-(oxo- κ O)butanoato- κ O']bis(2-propanolato)-, (T-4)- 14814-09-6, 3-Mercaptopropyltriethoxysilane 14867-28-8, 3-Iodopropyl trimethoxysilane 15267-95-5, Chloromethyltriethoxysilane 18147-81-4, 2-(Carbomethoxy) ethyltrichlorosilane 18279-67-9, 2-Chloroethyltriethoxysilane 18586-39-5, 2-(Diphenylphosphino) ethyltriethoxysilane 22464-99-9, Zirconium 2-ethylhexanoate 23779-32-0, N-(Triethoxysilylpropyl) urea 24413-04-5, (p-Chloromethyl)phenyltrimethoxysilane 24801-88-5, 3-Isocyanatopropyltriethoxysilane 27326-65-4, 2-(Trimethoxysilyl) ethyl-2-pyridine 27668-52-6 30110-74-8, Tetramethyldisiloxane 30110-74-8D, Tetramethyldisiloxane, derivs. 35141-36-7,

N-Trimethoxysilylpropyl-n,n,n-trimethyl ammonium chloride 38595-89-0,
 3-Acryloxypropyltrichlorosilane 51826-90-5, 3-Bromopropyl-
 trimethoxysilane 64426-41-1 68128-25-6, 1-Trimethoxysilyl-2-(m,p-
 chloromethyl)-phenylethane 79793-00-3, 2-(4-Chlorosulfonylphenyl)
 ethyltrichlorosilane 80906-67-8, N-(3-Trimethoxysilylpropyl)pyrrole
 95144-24-4, 1H-Imidazolium, 1-ethenyl-3-methyl-, chloride, polymer with
 1-ethenyl-2-pyrrolidinone 97171-79-4, Zirconium(IV) dimethacrylate
 126519-89-9, 2-(4-Chlorosulfonylphenyl) ethyltrimethoxysilane
 128850-89-5

RL: MOA (Modifier or additive use); TEM (Technical or engineered material
 use); USES (Uses)

(surface modifying agent; process for preparing reactive composites for
 fluid treatment by filtration)

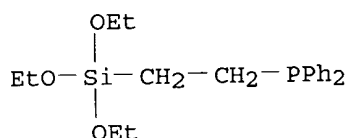
IT 18586-39-5, 2-(Diphenylphosphino) ethyltriethoxysilane

RL: MOA (Modifier or additive use); TEM (Technical or engineered material
 use); USES (Uses)

(surface modifying agent; process for preparing reactive composites for
 fluid treatment by filtration)

RN 18586-39-5 HCAPLUS

CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX
 NAME)



REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 11 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:556107 HCAPLUS

DOCUMENT NUMBER: 139:331791

TITLE: Heterometallic metal-metal chain complexes as
 metalloligands

AUTHOR(S): Schuh, Walter; Braunstein, Pierre; Welter, Richard

CORPORATE SOURCE: Institut Le-Bel, UMR CNRS 7513, Laboratoire de chimie
 de coordination, universite Louis-Pasteur, Strasbourg,
 67070, Fr.

SOURCE: Comptes Rendus Chimie (2003), 6(1), 59-65

CODEN: CRCOCR; ISSN: 1631-0748

PUBLISHER: Editions Scientifiques et Medicales Elsevier

DOCUMENT TYPE: Journal

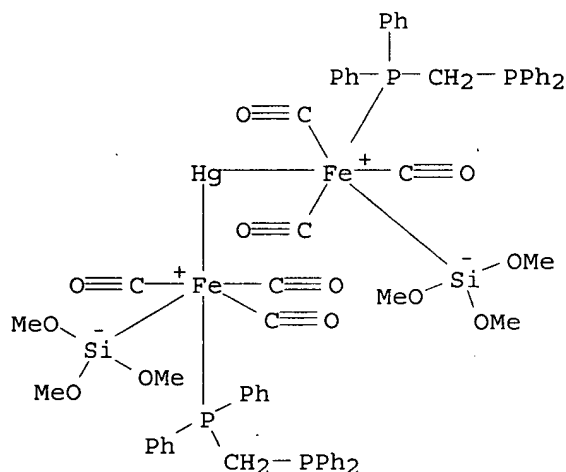
LANGUAGE: English

OTHER SOURCE(S): CASREACT 139:331791

AB The authors describe the synthesis and reactivity towards metal cations of
 metalloligands that contain a Fe-Hg-Fe chain-like core consisting of two
 iron carbonyl fragments bonded to a central mercury atom and linked to a
 donor function available for further metal complexation. Free rotation of
 these fragments about the Fe-Hg-Fe metal-metal σ bonds allows
 greater adaptability to the nature and stoichiometry of the added metal
 complex. Thus the reaction of metalloligand $[\text{Hg}\{\text{Fe}[\text{Si}(\text{OMe})_3](\text{CO})_3(\text{dppm})\}_2$
] with HgCl_2 and TiPF_6 gave cyclic $[\text{Hg}_2\{\text{Fe}[\text{Si}(\text{OMe})_3](\text{CO})_3(\text{dppm})\}_2](\text{PF}_6)_2$
 (5). Also prepared were the chain complexes $[\text{Hg}\{\text{Fe}[\text{Si}(\text{OMe})_3](\text{CO})_3(\text{dppm}-$
 $\text{E})\}_2]$ (6, E = S; 7, E = O) with pendent phosphine sulfide or oxide
 moieties, whose structures were determined by single crystal x-ray diffraction.
 CC 78-7 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 75

- IT 2923-28-6, Silver triflate 15418-29-8, Tetrakis(acetonitrile)
copper(1+) tetrafluoroborate 39929-21-0,
Chloro(tetrahydrothiophene)gold
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with mercury iron trimethoxysilyl carbonyl
(diphenylphosphinomethyl)diphenylphosphine sulfide heterometallic
complex with Fe-Hg-Fe chain-like core)
- IT 142563-99-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactions of mercury iron trimethoxysilyl carbonyl
bis(diphenylphosphino)methane heterometallic metalloligand complex with
Fe-Hg-Fe chain-like core with mercury chloride, sulfur and water)
- IT 142563-99-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactions of mercury iron trimethoxysilyl carbonyl
bis(diphenylphosphino)methane heterometallic metalloligand complex with
Fe-Hg-Fe chain-like core with mercury chloride, sulfur and water)
- RN 142563-99-3 HCAPLUS
- CN Iron, hexacarbonylbis[[(diphenylphosphino)methyl]diphenylphosphine-
κP](mercury)bis(trimethoxysilyl)di-, (2Fe-Hg), stereoisomer (9CI)
(CA INDEX NAME)



REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 12 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:417666 HCAPLUS

DOCUMENT NUMBER: 139:7352

TITLE: Aromatic compounds containing nitrogen and
phosphorus-functionalized amines for use in catalytic
reactions

INVENTOR(S): Kempe, Rhett; Schareina, Thomas; Monsees, Axel;
Riermeier, Thomas

PATENT ASSIGNEE(S): Degussa AG, Germany

SOURCE: PCT Int. Appl., 42 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003043735	A2	20030530	WO 2002-EP13048	20021121
WO 2003043735	A3	20040304		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
DE 10157358	A1	20030807	DE 2001-10157358	20011123
AU 2002366231	A1	20030610	AU 2002-366231	20021121
EP 1446224	A2	20040818	EP 2002-803396	20021121
EP 1446224	B1	20060125		
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK			
JP 2005509666	T2	20050414	JP 2003-545407	20021121
AT 316421	E	20060215	AT 2002-803396	20021121
US 2006058178	A1	20060316	US 2005-495969	20050630
PRIORITY APPLN. INFO.:			DE 2001-10157358	A 20011123
			WO 2002-EP13048	W 20021121
AB	The title compds., especially useful in the production of olefins, dienes, arylolefins, and acrylic acid derivs., have the structure R1R2PNR'R'' (R1, R2 represent any radical, preferably Ph, cyclohexyl, or tert-Bu; R' = N-containing aromatic heterocyclic group; R'' = Me3Si or an aromatic group). Reaction of 4 mmol 2-bipyridylamine with 4 mmol BuLi and then with 4 mmol Ph2PCl in ether at -77° gave 100% ligand C22H18N3P (I). Reaction of 0.25 mmol (COD)PdCl2 with 89 mg I in CH2Cl2 gave 75% Pd complex C22H18Cl2N3PPd. Use of this complex as a catalyst for the Suzuki reaction is exemplified.			
IC	ICM B01J031-00			
CC	35-2 (Chemistry of Synthetic High Polymers)			
IT	Section cross-reference(s): 67			
	7439-88-5D, Iridium, complexes with phosphinamines 7439-89-6D, Iron, complexes with phosphinamines 7440-02-0D, Nickel, complexes with phosphinamines 7440-05-3D, Palladium, complexes with phosphinamines 7440-06-4D, Platinum, complexes with phosphinamines 7440-16-6D, Rhodium, complexes with phosphinamines 7440-18-8D, Ruthenium, complexes with phosphinamines 7440-48-4D, Cobalt, complexes with phosphinamines 7440-50-8D, Copper, complexes with phosphinamines 13716-10-4D, transition metal complexes 13716-12-6D, transition metal complexes 29938-19-0D, transition metal complexes 472959-77-6D, transition metal complexes 472959-78-7D, transition metal complexes 472959-79-8D, transition metal complexes 472959-80-1D, transition metal complexes 472959-83-4D, transition metal complexes 472959-84-5D, transition metal complexes 472959-86-7D, transition metal complexes 472959-90-3D, transition metal complexes 472959-92-5D, transition metal complexes 472959-95-8D, transition metal complexes 472959-97-0D, transition metal complexes 472959-98-1D, transition metal complexes 472959-99-2D, transition metal complexes 472960-00-2D, transition metal complexes 472960-01-3D, transition metal complexes 472960-02-4D, transition metal complexes 472960-03-5D, transition metal complexes 472960-04-6D, transition metal complexes 472960-05-7D,			

transition metal complexes 472960-07-9D, transition metal complexes
472960-08-0D, transition metal complexes
RL: CAT (Catalyst use); USES (Uses)

(preparation of transition metal complex catalysts)

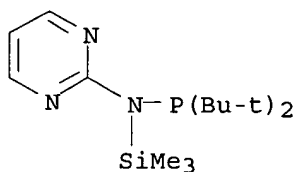
IT 472959-86-7D, transition metal complexes 472959-92-5D,
transition metal complexes 472959-95-8D, transition metal
complexes 472959-99-2D, transition metal complexes
472960-00-2D, transition metal complexes 472960-02-4D,
transition metal complexes 472960-03-5D, transition metal
complexes

RL: CAT (Catalyst use); USES (Uses)

(preparation of transition metal complex catalysts)

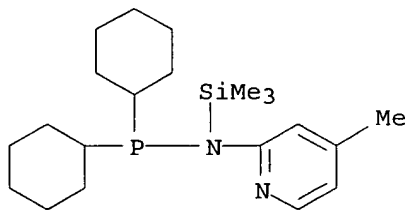
RN 472959-86-7 HCAPLUS

CN Phosphinous amide, P,P-bis(1,1-dimethylethyl)-N-2-pyrimidinyl-N-
(trimethylsilyl)- (9CI) (CA INDEX NAME)



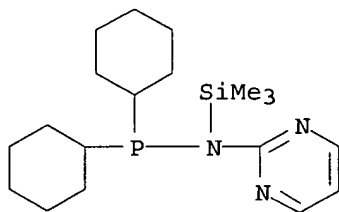
RN 472959-92-5 HCAPLUS

CN Phosphinous amide, P,P-dicyclohexyl-N-(4-methyl-2-pyridinyl)-N-
(trimethylsilyl)- (9CI) (CA INDEX NAME)



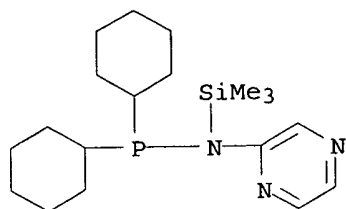
RN 472959-95-8 HCAPLUS

CN Phosphinous amide, P,P-dicyclohexyl-N-2-pyrimidinyl-N-(trimethylsilyl)-
(9CI) (CA INDEX NAME)

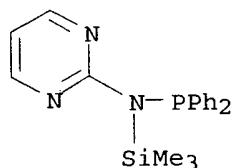


RN 472959-99-2 HCAPLUS

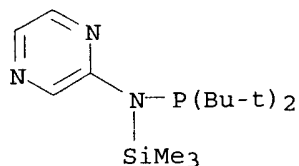
CN Phosphinous amide, P,P-dicyclohexyl-N-pyrazinyl-N-(trimethylsilyl)- (9CI)
(CA INDEX NAME)



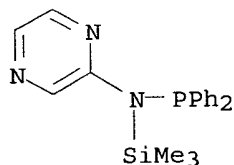
RN 472960-00-2 HCAPLUS
 CN Phosphinous amide, P,P-diphenyl-N-2-pyrimidinyl-N-(trimethylsilyl)- (9CI)
 (CA INDEX NAME)



RN 472960-02-4 HCAPLUS
 CN Phosphinous amide, P,P-bis(1,1-dimethylethyl)-N-pyrazinyl-N-(trimethylsilyl)- (9CI) (CA INDEX NAME)



RN 472960-03-5 HCAPLUS
 CN Phosphinous amide, P,P-diphenyl-N-pyrazinyl-N-(trimethylsilyl)- (9CI) (CA INDEX NAME)



L58 ANSWER 13 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2003:261717 HCAPLUS
 DOCUMENT NUMBER: 138:276361
 TITLE: Nitric oxide-releasing coated medical devices and method of preparing same
 INVENTOR(S): Fitzhugh, Anthony; Cheng, Peiwen
 PATENT ASSIGNEE(S): The Government of the United States of America, Represented by the Secretary Department of Health and Human Services, USA
 SOURCE: PCT Int. Appl., 51 pp.

DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

CODEN: PIXXD2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003026717	A1	20030403	WO 2002-US30160	20020923
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2002336761	A1	20030407	AU 2002-336761	20020923
EP 1436018	A1	20040714	EP 2002-773539	20020923
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				

PRIORITY APPLN. INFO.: US 2001-325049P P 20010926
 WO 2002-US30160 W 20020923

AB A method for preparing a nitric oxide-releasing substrate that includes contacting an amine-functionalized silane with a substrate, contacting at least one addnl. amine-functionalized silane with the substrate, and contacting the substrate with nitric oxide, and repeating these steps if and as desired to produce a coating of the desired thickness as well as quantity and duration of nitric oxide-release. Thus, trimethoxysilylpropyldiethylenetriamine, MeOH and water were mixed and transferred to an container. A stainless steel coupon was subjected to spraying for 3 s (3 times) and rotation in air for 15 s (3 times). The coupon was then placed in an oven at 60° to cure for 30 min. and after the coupon was removed from the oven and allowed to cool to room temperature, the procedure was repeated 2 addnl. times. The reiteratively- or multiply-coated coupon was placed in an oven at 60° overnight to cure. The next morning, the coupon was removed from the oven and allowed to cool to room temperature. The tube was then transferred to a Parr hydrogenation pressure vessel and oxygen was removed from the vessel using repeated cycles of pressurization/depressurization with nitrogen gas. This was followed by the introduction of NO at a pressure of 276 kPa (40 psi). The tube containing the coupon was exposed to the NO gas for 24 h. The total NO release was measured at 10,060 pmol/mm2.

IC ICM A61L031-12
 ICS A61L031-16; A61L029-12; A61L029-16; A61K009-52; A61K033-00

CC 63-7 (Pharmaceuticals)

IT Aluminum alloy, base
 Copper alloy, base
 Gold alloy, base
 Iron alloy, base
 Magnesium alloy, base
 Nickel alloy, base
 Silicon alloy, base
 Tin alloy, base
 Titanium alloy, base
 Zinc alloy, base

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (nitric oxide-releasing coated medical devices)

IT 75-54-7, Methylchlorosilane 78-07-9, Ethyltriethoxysilane 78-10-4, Tetraethoxysilane 107-37-9, Allyltriethoxysilane 107-72-2, Amyltriethoxysilane 110-85-0D, Piperazine, silanes functionalized with 111-40-0D, Diethylenetriamine, silanes functionalized with 144-79-6, Diphenylmethylchlorosilane 312-40-3, Difluorodiphenylsilane 358-67-8, (3,3,3-Trifluoropropyl)methyldimethoxysilane 597-67-1, Triethylethoxysilane 681-84-5, Tetramethoxysilane 681-97-0, (3,3,3-Trifluoropropyl)triethoxysilane 682-01-9, Tetrapropoxysilane 775-56-4, Methylphenyldiethoxysilane 780-69-8, Phenyltriethoxysilane 919-30-2 928-65-4 998-30-1, Triethoxysilane 1000-50-6 1014-66-0 1067-25-0 1067-57-8 1071-17-6 1112-39-6, Dimethyldimethoxysilane 1321-74-0D, Divinylbenzene, silanes functionalized with 1481-41-0, (3,3,3-Trifluoropropyl)dimethylchlorosilane 1516-80-9, Triphenylethoxysilane 1631-83-0, Diphenylchlorosilane 1745-72-8, Divinyldichlorosilane 1760-24-3 1825-58-7 1825-59-8, Diphenylmethylethoxysilane 1825-62-3, Trimethylethoxysilane 1825-68-9, Dimethylmethoxychlorosilane 1873-88-7 2031-62-1, Methyltriethoxysilane 2031-67-6, Methyltriethoxysilane 2182-66-3, Dimethyldiacetoxysilane 2487-90-3, Trimethoxysilane 2530-83-8, 3-Glycidoxypropyltrimethoxysilane 2530-85-0 2530-86-1 2550-04-1, Allyltriethoxysilane 2551-83-9, Allyltrimethoxysilane 2553-19-7, Diethoxydiphenylsilane 2565-07-3, Diacetoxysilane 2761-24-2, Amyltriethoxysilane 2768-02-7, Vinyltrimethoxysilane 2943-75-1 2996-92-1, Phenyltrimethoxysilane 2996-95-4, Amyltrimethoxysilane 3027-21-2, Methylphenyldimethoxysilane 3068-76-6 3069-19-0 3069-42-9, n-Octadecyltrimethoxysilane 3179-76-8 3388-04-3 3401-26-1 3435-15-2, Methylacetoxysilane 3550-35-4 3634-56-8, Isopropylmethylchlorosilane 4028-23-3, Allyldimethylchlorosilane 4067-16-7D, Pentaethylenehexamine, silanes functionalized with 4130-08-9, Vinyltriacetoxysilane 4253-34-3, Methyltriacetoxysilane 4369-14-6 4420-74-0, 3-Mercaptopropyltrimethoxysilane 4766-57-8 5021-93-2, Diethyldiethoxysilane 5089-70-3 5290-29-9, Triethylacetoxysilane 5314-55-6, Ethyltrimethoxysilane 5578-42-7 5894-60-0 6843-66-9, Dimethoxydiphenylsilane 6917-76-6, Ethyldimethylchlorosilane 7399-00-0, n-Octadecyltriethoxysilane 7538-44-5 7751-38-4, Diisopropylchlorosilane 9005-49-6, Heparin, biological studies 10102-43-9, Nitric oxide, biological studies 10339-02-3 12119-09-4 13154-24-0, Tri-isopropylchlorosilane 13170-23-5 13340-46-0, Phenethyltriethoxysilane 13497-18-2 13508-53-7 13732-00-8 13822-56-5 13883-39-1 14513-34-9 14799-93-0 14799-94-1 14814-09-6, 3-Mercaptopropyltriethoxysilane 14857-34-2, Dimethylethoxysilane 14867-28-8 15005-59-1 15164-57-5, Diethyldimethoxysilane 15267-95-5 16415-13-7 16532-02-8 16881-77-9, Methyltrimethoxysilane 17070-70-1 17146-08-6 17146-09-7 17306-05-7 17407-09-9, 2-(Trimethylsiloxy)ethyl methacrylate 17477-29-1 17689-77-9, Ethyltriacetoxysilane 17887-45-5 17887-60-4 17980-47-1, Isobutyltriethoxysilane 18028-96-1 18127-33-8 18132-63-3 18147-23-4 18156-08-6 18162-48-6 18162-84-0, n-Octyldimethylchlorosilane 18166-37-5 18171-19-2 18173-73-4 18186-97-5 18204-80-3 18230-61-0, Diisopropyldimethoxysilane 18236-89-0 18245-94-8 18279-67-9 18306-45-1 18395-30-7, Isobutyltrimethoxysilane 18395-93-2 18406-11-6 18407-07-3 18536-91-9 18586-39-5, 2-(Diphenylphosphino)ethyltriethoxysilane 18632-22-9 18643-08-8 18817-29-3 20006-68-2, (3-Heptafluoroisopropoxy)propylmethylchlorosilane 21116-75-6 22408-96-4, Diethyl(triethoxysilylpropyl)malonate 24413-04-5 24801-87-4 24801-88-5 25357-81-7 25374-10-1 27490-70-6 31001-77-1, 3-Mercaptopropylmethyltrimethoxysilane 33342-85-7 35141-36-7 37843-11-1 38595-89-0 39050-74-3, Isooctyltrichlorosilane 41051-80-3 41632-64-8 51895-58-0 52090-18-3 52217-57-9

53749-38-5 57483-09-7 57978-14-0 58479-61-1 58751-56-7
 60317-40-0 60592-92-9 64712-50-1 65100-04-1 65799-47-5,
 (3-Glycidoxypentyl)methyldimethoxysilane 67592-36-3 67892-56-2
 70364-11-3, Vinyltrimethylethoxysilane 70693-47-9 70851-50-2
 71550-66-8 71808-65-6 76301-00-3 76358-47-9 79793-00-3
 82887-05-6, Diethylphosphatoethyltriethoxysilane 82985-35-1 84557-79-9
 85712-15-8 85857-16-5 87135-01-1 87994-64-7 92779-73-2
 94194-98-6 99651-83-9 99740-64-4 109629-99-4 113276-73-6
 117559-37-2 122630-66-4 123198-57-2 125091-12-5 126990-35-0
 126990-43-0 127687-56-3, Isooctyltriethoxysilane 131400-19-6
 141813-15-2 141813-16-3 143487-47-2 145299-02-1 145611-68-3
 155159-90-3 157223-32-0 163155-57-5 174083-66-0 184870-14-2,
 3-Glycidoxypentyltrimethylethoxysilane 211443-33-3 457065-96-2
 503565-33-1 503565-34-2 503565-35-3 503565-36-4 503565-40-0
 503565-41-1 503565-42-2 503565-43-3 503565-44-4 503565-45-5
 503565-46-6 503565-47-7 503565-48-8 503565-49-9 503565-50-2
 503565-51-3 503565-52-4 503611-66-3 503611-67-4 503611-68-5
 503611-69-6

RL: PEP (Physical, engineering or chemical process); PYP (Physical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(nitric oxide-releasing coated medical devices)

IT 7429-90-5, Aluminum, biological studies 7439-89-6, Iron, biological studies 7440-02-0, Nickel, biological studies 7440-21-3, Silicon, biological studies 7440-31-5, Tin, biological studies 7440-32-6, Titanium, biological studies 7440-50-8, **Copper**, biological studies 7440-57-5, Gold, biological studies 7440-66-6, Zinc, biological studies 9002-84-0, PTFE 9002-88-4, Polyethylene 9002-98-6 9002-98-6D, methoxysilyl derivs. 9003-07-0, Polypropylene 9003-53-6, Polystyrene 9003-56-9, Acrylonitrile-butadiene-styrene copolymer 9016-00-6D, Polydimethyl siloxane, amine derivs. 12597-68-1, Stainless steel, biological studies 25038-59-9, PET, biological studies 31900-57-9D, Polydimethyl siloxane, amine derivs.

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(nitric oxide-releasing coated medical devices)

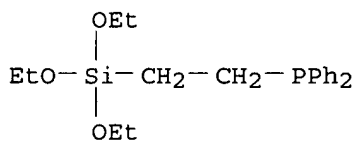
IT 18586-39-5, 2-(Diphenylphosphino)ethyltriethoxysilane

RL: PEP (Physical, engineering or chemical process); PYP (Physical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(nitric oxide-releasing coated medical devices)

RN 18586-39-5 HCAPLUS

CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 14 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:410413 HCAPLUS

DOCUMENT NUMBER: 135:16333

TITLE: Self-assembled metal colloid monolayers having size and density gradients

INVENTOR(S): Natan, Michael J.; Baker, Bonnie E.
 PATENT ASSIGNEE(S): The Penn State Research Foundation, USA
 SOURCE: U.S., 78 pp., Cont.-in-part of U.S. Ser. No. 769.970,
 abandoned.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 3
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6242264	B1	20010605	US 2000-254142	20000112
WO 9810289	A1	19980312	WO 1997-US15581	19970904
W: CA, JP, KR, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 2003157732	A1	20030821	US 2001-810035	20010316
PRIORITY APPLN. INFO.:			US 1996-25064P	P 19960904
			US 1996-769970	B2 19961219
			WO 1997-US15581	W 19970904
			US 2000-254142	A1 20000112

AB Metal colloid monolayers comprising a plurality of colloidal Ag-clad Au nanoparticles surface confined on a substrate are described which have a gradient of nanoparticle d. in a first direction, and a gradient in particle size in a second direction perpendicular to the first direction. The gradients may be formed by coating a substrate with a bifunctional organic film; immersing the coated substrate into a colloidal Au solution so that a first leading edge of the substrate is immersed in the colloidal Au solution for a longer period of time relative to a first trailing edge to provide a monolayer of Au nanoparticles having a decreasing level of coverage from the first leading edge to the first trailing edge; withdrawing the substrate from the colloidal Au solution; rotating the substrate through an angle of about 90°; immersing the substrate provided with the monolayer of Au nanoparticles in an Ag+ solution so that a second leading edge of the substrate is immersed in the Ag+ solution for a longer period of time relative to a second trailing edge to provide a monolayer of Au nanoparticles having a decreasing level of Ag cladding thickness from the second leading edge to the second trailing edge; and withdrawing the substrate from the Ag+ solution. Methods of determining optimal surface characteristics of a metal colloid monolayer comprising a plurality of colloidal Ag-clad Au nanoparticles surface confined on a substrate for use in an anal. procedure are described which entail using the graded monolayer for an anal. procedure; and analyzing the results achieved at different regions of the graded monolayer to determine a nanoparticle coverage and particle size that provides an optimal result. The monolayer may be a surface-enhanced Raman scattering response substrate or a biosensor for detecting the presence of a biol. ligand.

IC ICM G01N021-65
 ICS G01N033-48; G01N033-50; G01N033-553

INCL 436171000

CC 9-1 (Biochemical Methods)
 Section cross-reference(s): 66, 73, 79, 80

IT 60-23-1, Mercaptoethylamine 60-24-2, 2-Mercaptoethanol 1067-47-6,
 3-Cyanopropyltriethoxysilane 1344-28-1, Alumina, uses 4420-74-0,
 3-Mercaptopropyltrimethoxysilane 7440-22-4, Silver, uses 7440-57-5,
 Gold, uses 7631-86-9, silica, uses 12142-45-9, Potassium niobate
 (K4Nb6O17) 13822-56-5, 3-Aminopropyltrimethoxysilane 14808-60-7,
 Quartz, uses 18282-10-5, Tin dioxide 18586-39-5,
 2-(Diphenylphosphino)ethyltriethoxysilane 27326-65-4,

2-(Trimethoxysilyl)ethyl-2-pyridine 30382-71-9 31001-77-1,
 3-Mercaptopropylmethyldimethoxysilane 71550-12-4,
 Poly(allylamine)hydrochloride 143203-47-8, (3-
 Cyanopropyl)dimethylmethoxysilane

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(self-assembled silver-clad gold colloid monolayers having size and d. gradients and their use in anal.)

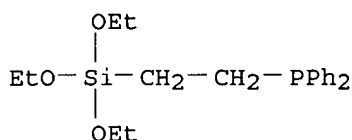
IT 18586-39-5, 2-(Diphenylphosphino)ethyltriethoxysilane

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(self-assembled silver-clad gold colloid monolayers having size and d. gradients and their use in anal.)

RN 18586-39-5 HCAPLUS

CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 15 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:360004 HCAPLUS

DOCUMENT NUMBER: 134:367046

TITLE: Chiral bisphosphines, transition metal complexes thereof and their uses as stereoselective catalysts in asymmetric reactions

INVENTOR(S): Zhang, Xumu

PATENT ASSIGNEE(S): The Penn State Research Foundation, USA

SOURCE: PCT Int. Appl., 66 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001034612	A2	20010517	WO 2000-US30889	20001110
WO 2001034612	A3	20011004		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
CA 2390998	AA	20010517	CA 2000-2390998	20001110
AU 2001014813	A5	20010606	AU 2001-14813	20001110
EP 1228034	A2	20020807	EP 2000-977134	20001110
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,			

IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

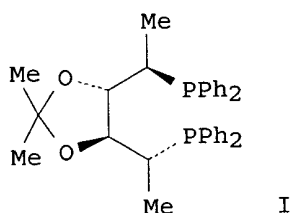
US 6576772	B1	20030610	US 2000-711635	20001110
US 2003232991	A1	20031218	US 2003-410711	20030410
US 2004167339	A1	20040826	US 2004-775803	20040210
US 6969694	B2	20051129		

PRIORITY APPLN. INFO.:

US 1999-164508P	P	19991110
US 2000-187851P	P	20000308
US 2000-711635	A3	20001110
WO 2000-US30889	W	20001110
US 2003-410711	A1	20030410

OTHER SOURCE(S): MARPAT 134:367046

GI



AB Over 90 chiral bisphosphine ligands, e.g., (R,S,S,R)-DIOP* (I; preparation given), and transition metal complexes based on such chiral ligands useful in asym. catalysis are claimed, as are methods of preparing these ligands. In examples given, Rh complexes of I in MeOH reduce enamides, e.g., RC(NHAc):CHR1 (R = p-PhC6H4, 2-naphthyl, R1 = H; R = Ph, R1 = CHMe2; R = 2-naphthyl, R1 = Me) to the corresponding amines with $\geq 99\%$ enantioselectivity. The transition metal complexes of the chiral ligands are useful in asym. reactions such as asym. hydrogenation, hydride transfer (no data), hydrosilylation (no data), hydroboration (no data), hydrovinylation (no data), hydroformylation (no data), hydrocarboxylation (no data), isomerization (no data), allylic alkylation (no data), cyclopropanation (no data), Diels-Alder reaction (no data), Heck reaction (no data), isomerization (no data), Aldol reaction (no data), Michael addition (no data) and epoxidn. (no data) reactions.

IC ICM C07F

CC 29-7 (Organometallic and Organometalloidal Compounds)

Section cross-reference(s): 67, 78

IT	340038-51-9	340038-52-0	340038-53-1	340038-54-2	340038-55-3
	340038-56-4	340038-57-5	340038-60-0	340038-62-2	340038-64-4
	340038-65-5	340038-67-7	340038-69-9	340038-71-3	340038-73-5
	340038-75-7	340038-77-9	340038-79-1	340038-80-4	340038-81-5
	340038-82-6	340038-83-7	340038-84-8	340038-85-9	340038-86-0
	340038-87-1	340038-88-2	340038-89-3	340038-90-6	340038-91-7
	340038-92-8	340038-93-9	340039-79-4	340039-80-7	340039-81-8
	340039-82-9				

RL: CAT (Catalyst use); USES (Uses)

(chiral bisphosphines as ligands for stereoselective transition-metal catalysts in asym. reactions)

IT	340038-15-5	340038-16-6	340038-17-7	340038-18-8	
	340038-19-9	340038-20-2	340038-21-3	340038-22-4	340038-23-5
	340038-24-6	340038-25-7	340038-26-8	340038-27-9	340038-28-0
	340038-29-1	340038-30-4	340038-31-5	340038-32-6	340038-33-7
	340038-34-8	340038-35-9	340038-36-0	340038-37-1	340038-38-2

340038-39-3 340038-40-6 340038-41-7 340038-42-8 340038-43-9
 340038-44-0 340038-45-1 340038-46-2 340038-47-3 340038-48-4
 340038-49-5 340038-50-8 340038-94-0 340039-75-0 340039-76-1
 340039-77-2 340039-78-3

RL: CAT (Catalyst use); USES (Uses)

(chiral phosphines as ligands for stereoselective transition-metal catalysts in asym. reactions)

IT 546-68-9, Titanium tetraisopropoxide 1295-35-8, Bis(1,5-cyclooctadiene)nickel 3153-26-2, Vanadyl bis(acetylacetonate) 3375-31-3 7439-88-5D, Iridium, derivs., reactions 7439-96-5D, Manganese, derivs., reactions 7439-98-7D, Molybdenum, derivs., reactions 7440-02-0D, Nickel, derivs., reactions 7440-05-3D, Palladium, derivs., reactions 7440-06-4D, Platinum, derivs., reactions 7440-15-5D, Rhenium, derivs., reactions 7440-16-6D, Rhodium, derivs., reactions 7440-18-8D, Ruthenium, derivs., reactions 7440-32-6D, Titanium, derivs., reactions 7440-50-8D, **Copper**, derivs., reactions 7440-62-2D, Vanadium, derivs., reactions 10025-65-7, Platinum dichloride 12012-95-2, Bis(η^3 -allylchloropalladium) 12082-47-2; Acetylacetonatobis(ethylene)rhodium 12092-47-6, Dichlorobis(cyclooctadiene)dirhodium 12112-67-3, Bis[chloro(1,5-cyclooctadiene)iridium] 12289-94-0, Bis(2-methallyl)-1,5-cyclooctadieneruthenium 14024-58-9, Bis(acetylacetonato)manganese 14874-82-9, Acetylacetonato(dicarbonyl)rhodium 15244-77-6, Dicarboxyldichlororhodium 17524-05-9, Bis(acetoacetonato)dioxomolybdenum 34946-82-2, Cupric triflate 36620-11-8 42152-44-3, Cuprous triflate 50982-12-2, Dichloro(1,5-cyclooctadiene)ruthenium 51364-51-3, Tris(dibenzylideneacetone)dipalladium 62793-31-1, Bis(1,5-cyclooctadiene)rhodium hexafluorophosphate 70197-13-6, Methylrhenium trioxide 130296-28-5 171615-75-1

RL: CAT (Catalyst use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)

(reaction with chiral bisphosphine ligands to form stereoselective transition-metal catalysts for asym. reactions)

IT 340038-55-3

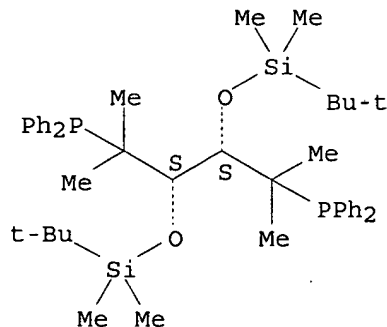
RL: CAT (Catalyst use); USES (Uses)

(chiral bisphosphines as ligands for stereoselective transition-metal catalysts in asym. reactions)

RN 340038-55-3 HCAPLUS

CN threo-Hexitol, 1,2,5,6-tetradeoxy-3,4-bis-O-[(1,1-dimethylethyl)dimethylsilyl]-2,5-bis(diphenylphosphino)-2,5-dimethyl- (9CI) (CA INDEX NAME)

Relative stereochemistry.



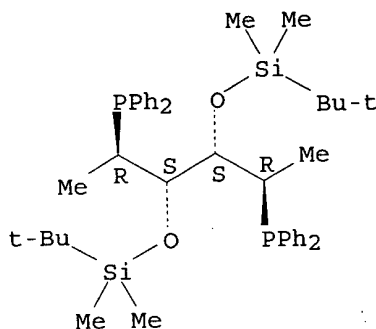
IT 340038-17-7

RL: CAT (Catalyst use); USES (Uses)

(chiral phosphines as ligands for stereoselective transition-metal catalysts in asym. reactions)

RN 340038-17-7 HCAPLUS
 CN Mannitol, 1,2,5,6-tetra-deoxy-3,4-bis-O-[(1,1-dimethylethyl)dimethylsilyl]-2,5-bis(diphenylphosphino)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L58 ANSWER 16 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:897747 HCAPLUS

DOCUMENT NUMBER: 134:287744

TITLE: Additive channel-constrained metallization of high-resolution features

AUTHOR(S): Chen, M.-S.; Brandow, S. L.; Dressick, W. J.
 CORPORATE SOURCE: Naval Research Laboratory, Center for Bio/Molecular Science & Engineering (Code 6950), Washington, DC, 20375-5348, USA

SOURCE: Thin Solid Films (2000), 379(1,2), 203-212
 CODEN: THSFAP; ISSN: 0040-6090

PUBLISHER: Elsevier Science S.A.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The patterned, selective electroless deposition of submicron metal features has been achieved on Si by using a channel-constrained technique. Chemical-amplified neg. tone photoresists, exposed with UV or electron-beam sources, were developed to create patterned channels for constrained, additive, metal growth on an underlying ligating self-assembled monolayer film. The process is attractive for the production of plasma etch-resistant high resolution metal features for VLSI applications, as well as for the fabrication of high aspect ratio metal lines useful as elec. interconnects. The adhesion of the photoresist to the underlying monolayer plays a critical role in the process, permitting the removal of photoresist residues from patterned channels during development to allow metalization without the loss of feature critical dimension control or photoresist delamination. Patterned, etched metal features with linewidths to .apprx.0.1 μ m have been demonstrated.

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 76

IT 1760-24-3, N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane

18586-39-5, 2-(Diphenylphosphino)ethyltriethoxysilane

27326-65-4, 2-(Trimethoxysilyl)ethyl-2-pyridine 69898-76-6, Niposit 468

75822-22-9 82601-54-5, MF 312 123141-74-2, SNR-248 144638-02-8, SAL

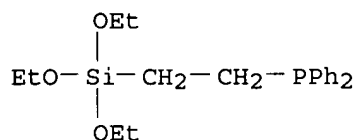
601ER2 332343-31-4, Megaposit SNR 200.5

RL: PEP (Physical, engineering or chemical process); PROC (Process)

(patterned selective electroless deposition of submicron metal features by channel-constrained technique on Si containing chemical-amplified neg. resist and ligating organosilane SAM underlayer)

IT 18586-39-5, 2-(Diphenylphosphino)ethyltriethoxysilane
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(patterned selective electroless deposition of submicron metal features by channel-constrained technique on Si containing chemical-amplified neg. resist and ligating organosilane SAM underlayer)

RN 18586-39-5 HCAPLUS
CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 17 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:882189 HCAPLUS

DOCUMENT NUMBER: 134:222266

TITLE: Towards asymmetric catalysis in the major groove of 1,1'-binaphthalenes

AUTHOR(S): Lustenberger, Philipp; Diederich, Francois

CORPORATE SOURCE: Laboratorium fur Organische Chemie, Eidgenossische Technische Hochschule, ETH-Zentrum, Zurich, CH-8092, Switz.

SOURCE: Helvetica Chimica Acta (2000), 83(11), 2865-2883

CODEN: HCACAV; ISSN: 0018-019X

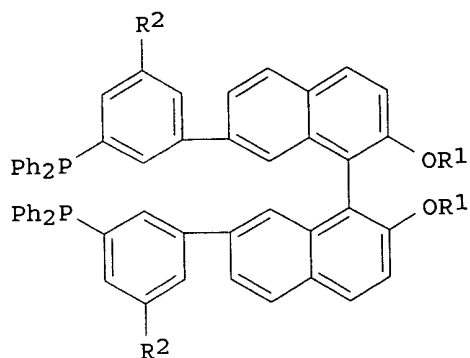
PUBLISHER: Verlag Helvetica Chimica Acta

DOCUMENT TYPE: Journal

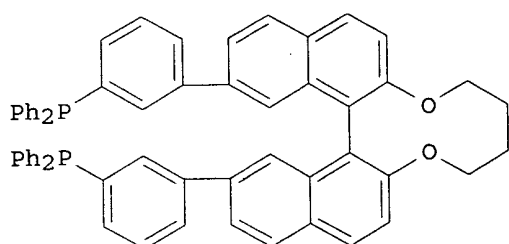
LANGUAGE: English

OTHER SOURCE(S): CASREACT 134:222266

GI



I



II

AB Four new diphosphine ligands, (R)-I (R1 = Me, R2 = H), (R)-I [R1 = CH2CH2O(CH2CH2O)2Me; R2 = H], (S)-I (R1 = Me, R2 = C.tplbond.CCH2CH2OCH2OCH2CH2OMe), and (R)-II, featuring metal-coordination sites located in the major groove of chiral 1,1'-binaphthalene clefts, were prepared in enantiomerically pure form. The performance of this new class of ligands was tested in enantioselective, Pd-catalyzed allylic alkylation reactions with acyclic and cyclic Me carbonates as substrates under various reaction conditions. Using sodium benzenesulfinate as a nucleophile, the reactivity of the catalysts formed with the new ligands and suitable palladium precursors was found satisfactory (>90%); however, the ee values were in all cases poor (<4%). Slightly better results were obtained using anions of di-Me malonate as nucleophiles, but, also in these cases, the ee values never exceeded 17%. 31P-NMR spectroscopic investigations revealed the formation of multiple-catalyst species in solution, and mol. modeling suggested a lack of embedding of the coordinated substrate in a "chiral pocket", which probably accounts for the observed low level of enantioselectivity.

CC 21-2 (General Organic Chemistry)

IT 333-20-0, Potassium isothiocyanate 10025-78-2, Trichlorosilane

16004-08-3, Copper chloride hydroxide (CuCl(OH))

RL: RGT (Reagent); RACT (Reactant or reagent)

(preparation of)

IT 10212-03-0P 19752-57-9P, 1,3-Dibromo-5-iodobenzene 196081-12-6P
263339-93-1P 328917-28-8P 328917-29-9P 328917-30-2P 328917-31-3P
328917-32-4P 328917-33-5P 328917-34-6P 329278-48-0P
329278-49-1P 329278-50-4P 329278-53-7P 329278-55-9P 329278-57-1P
329278-59-3P 329278-60-6P 329278-61-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(toward asym. catalysis in major groove of 1,1'-binaphthalenes)

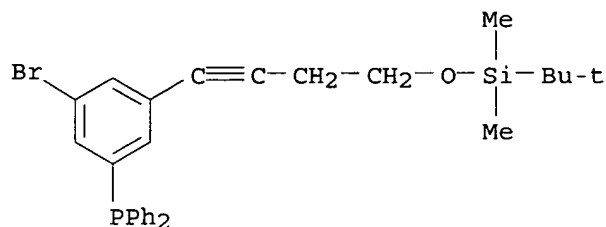
IT 328917-32-4P 328917-33-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(toward asym. catalysis in major groove of 1,1'-binaphthalenes)

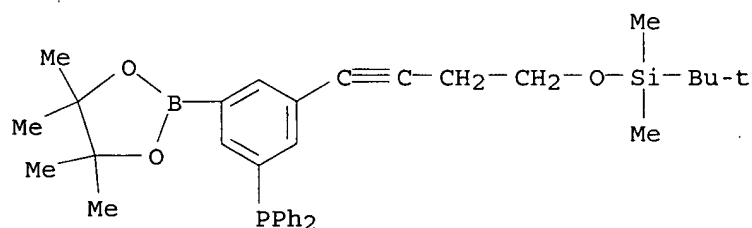
RN 328917-32-4 HCAPLUS

CN Phosphine, [3-bromo-5-[4-[[[(1,1-dimethylethyl)dimethylsilyl]oxy]-1-butynyl]phenyl]diphenyl- (9CI) (CA INDEX NAME)



RN 328917-33-5 HCAPLUS

CN Phosphine, [3-[4-[[[(1,1-dimethylethyl)dimethylsilyl]oxy]-1-butynyl]-5-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)phenyl]diphenyl- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 95 THERE ARE 95 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 18 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1999:44195 HCAPLUS

DOCUMENT NUMBER: 130:196400

TITLE: Heterogenizing Homogeneous Catalysis Using Molecular Self-Assembly of Long Alkane Chain Phosphines Bound to Rh(I) Complexes

AUTHOR(S): Petrucci, Maria G. L.; Kakkar, Ashok K.

CORPORATE SOURCE: Department of Chemistry, McGill University, Montreal, QC, Can.

SOURCE: Chemistry of Materials (1999), 11(2), 269-276

CODEN: CMATEX; ISSN: 0897-4756

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Long alkane chain hydrocarbons terminated with OH and PPh₂ groups, HO-(CH₂)_n-PPh₂ (n = 10-12) were self-assembled on inorg. oxide surfaces via acid-base hydrolysis of surface-anchored [Si]-NET₂ groups with terminal OH moieties and subsequently used to covalently anchor Rh(I) complexes. Similar thin films can also be prepared from [Si]-NET₂ and RhCl(1,5-C₈H₁₂)[PPh₂(CH₂)_nOH]. The functionalized surfaces were characterized using solid-state NMR, contact angle goniometry, ellipsometry, XPS, and FT-IR. The self-assembled organometallic thin films were found to be highly active in catalyzing hydrogenation

of tolan. Surface-bound Rh(I) catalyst is stable and can be recycled, while the homogeneous analog decomps. under similar catalytic reaction conditions. The authors advise the use of safety in handling the piranha solution for surface preparation

CC 22-7 (Physical Organic Chemistry)

Section cross-reference(s): 67

ST self assembled **film** chain phosphine rhodium complex
hydrogenation catalyst; surface bound chain phosphine rhodium complex
hydrogenation catalyst; safety piranha soln

IT MAS NMR spectroscopy

(CP, $^{31}\text{P}\{^1\text{H}\}$ spectra for **film** characterization; surface characterization and evaluation of catalytic activity in tolan hydrogenation of self-assembled monolayer **films** of rhodium-cyclooctadiene-chain phosphine complexes on silica)

IT IR spectroscopy

(Fourier-transform, **film** characterization; surface characterization and evaluation of catalytic activity in tolan hydrogenation of self-assembled monolayer **films** of rhodium-cyclooctadiene-chain phosphine complexes on silica)

IT Binding energy

(XPS; surface characterization and evaluation of catalytic activity in tolan hydrogenation of self-assembled monolayer **films** of rhodium-cyclooctadiene-chain phosphine complexes on silica)

IT Ellipsometry

X-ray photoelectron spectroscopy

(**film** characterization; surface characterization and evaluation of catalytic activity in tolan hydrogenation of self-assembled monolayer **films** of rhodium-cyclooctadiene-chain phosphine complexes on silica)

IT Stereochemistry

(of hydrogenation of tolan; surface characterization and evaluation of catalytic activity in tolan hydrogenation of self-assembled monolayer **films** of rhodium-cyclooctadiene-chain phosphine complexes on silica)

IT Catalyst supports

Chemical chains

Contact angle

Hydrogenation

Hydrogenation catalysts

Monolayers

Surface structure

(surface characterization and evaluation of catalytic activity in tolan hydrogenation of self-assembled monolayer **films** of rhodium-cyclooctadiene-chain phosphine complexes on silica)

IT 7440-16-6, Rhodium, properties 7440-21-3, Silicon, properties
7440-44-0, Carbon, properties 7723-14-0, Phosphorus, properties
7782-44-7, Oxygen, properties 7782-50-5, Chlorine, properties
RL: PRP (Properties)

(XPS binding energy in surface complex; surface characterization and evaluation of catalytic activity in tolan hydrogenation of self-assembled monolayer **films** of rhodium-cyclooctadiene-chain phosphine complexes on silica)

IT 15475-27-1, Potassium diphenylphosphide

RL: RCT (Reactant); RACT (Reactant or reagent)

(conversion to long-chain phosphines; surface characterization and evaluation of catalytic activity in tolan hydrogenation of self-assembled monolayer **films** of rhodium-cyclooctadiene-chain phosphine complexes on silica)

IT 26305-83-9P 34714-01-7P 220742-33-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT

- (Reactant or reagent)
(conversion to phosphine; surface characterization and evaluation of catalytic activity in tolan hydrogenation of self-assembled monolayer films of rhodium-cyclooctadiene-chain phosphine complexes on silica)
- IT 19101-05-4DP, silica-bound 220742-31-4DP, silica-bound 220742-35-8DP, silica-bound
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(coordination; surface characterization and evaluation of catalytic activity in tolan hydrogenation of self-assembled monolayer films of rhodium-cyclooctadiene-chain phosphine complexes on silica)
- IT 12092-47-6, μ -Chloro(1,5-cyclooctadiene)rhodium(I) dimer
RL: RCT (Reactant); RACT (Reactant or reagent)
(coordinative substitution; surface characterization and evaluation of catalytic activity in tolan hydrogenation of self-assembled monolayer films of rhodium-cyclooctadiene-chain phosphine complexes on silica)
- IT 220742-30-3P 220742-32-5P 220742-34-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(desilylation and coordination; surface characterization and evaluation of catalytic activity in tolan hydrogenation of self-assembled monolayer films of rhodium-cyclooctadiene-chain phosphine complexes on silica)
- IT 501-65-5, Tolan
RL: RCT (Reactant); RACT (Reactant or reagent)
(hydrogenation; surface characterization and evaluation of catalytic activity in tolan hydrogenation of self-assembled monolayer films of rhodium-cyclooctadiene-chain phosphine complexes on silica)
- IT 996-50-9, N,N-Diethyl(trimethylsilyl)amine
RL: RCT (Reactant); RACT (Reactant or reagent)
(silylation agent; surface characterization and evaluation of catalytic activity in tolan hydrogenation of self-assembled monolayer films of rhodium-cyclooctadiene-chain phosphine complexes on silica)
- IT 1611-56-9, 1-Bromo-11-undecanol 51309-10-5, 1-Chloro-10-decanol
RL: RCT (Reactant); RACT (Reactant or reagent)
(silylation; surface characterization and evaluation of catalytic activity in tolan hydrogenation of self-assembled monolayer films of rhodium-cyclooctadiene-chain phosphine complexes on silica)
- IT 19101-05-4P 220742-31-4P 220742-35-8P 220742-94-9P 220742-98-3P 220743-04-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(surface anchoring; surface characterization and evaluation of catalytic activity in tolan hydrogenation of self-assembled monolayer films of rhodium-cyclooctadiene-chain phosphine complexes on silica)
- IT 7631-86-9D, Silica, surface-bound rhodium phosphine complexes, uses
RL: CAT (Catalyst use); USES (Uses)
(surface characterization and evaluation of catalytic activity in tolan hydrogenation of self-assembled monolayer films of rhodium-cyclooctadiene-chain phosphine complexes on silica)
- IT 220742-93-8P 220742-94-9DP, silica-bound 220742-96-1P 220742-98-3DP, silica-bound 220743-01-1P 220743-04-4DP, silica-bound
RL: CAT (Catalyst use); PRP (Properties); SPN (Synthetic preparation);

PREP (Preparation); USES (Uses)
 (surface characterization and evaluation of catalytic activity in tolan
 hydrogenation of self-assembled monolayer **films** of
 rhodium-cyclooctadiene-chain phosphine complexes on silica)

IT 3344-77-2, 1-Bromo-12-dodecanol
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (surface characterization and evaluation of catalytic activity in tolan
 hydrogenation of self-assembled monolayer **films** of
 rhodium-cyclooctadiene-chain phosphine complexes on silica)

IT 103-29-7P, Bibenzyl 103-30-0P 645-49-8P, cis-Stilbene
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (surface characterization and evaluation of catalytic activity in tolan
 hydrogenation of self-assembled monolayer **films** of
 rhodium-cyclooctadiene-chain phosphine complexes on silica)

IT 220742-30-3P 220742-32-5P 220742-34-7P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (desilylation and coordination; surface characterization and evaluation
 of catalytic activity in tolan hydrogenation of self-assembled
 monolayer **films** of rhodium-cyclooctadiene-chain phosphine
 complexes on silica)

RN 220742-30-3 HCAPLUS
 CN Phosphine, diphenyl[10-[(trimethylsilyl)oxy]decyl]- (9CI) (CA INDEX NAME)

Me₃Si-O- (CH₂)₁₀-PPh₂

RN 220742-32-5 HCAPLUS
 CN Phosphine, diphenyl[11-[(trimethylsilyl)oxy]undecyl]- (9CI) (CA INDEX NAME)

Me₃Si-O- (CH₂)₁₁-PPh₂

RN 220742-34-7 HCAPLUS
 CN Phosphine, diphenyl[12-[(trimethylsilyl)oxy]dodecyl]- (9CI) (CA INDEX NAME)

Me₃Si-O- (CH₂)₁₂-PPh₂

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

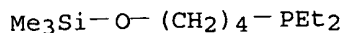
L58 ANSWER 19 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1998:269016 HCAPLUS
 DOCUMENT NUMBER: 128:252029
 TITLE: Acid-Base Hydrolytic Chemistry Route to Thin
Films Containing Terminal Donor Ligands and
 Organometallic Complexes for Heterogenization of Metal
 Complex Catalysis
 AUTHOR(S): Petrucci, Maria G. L.; Kakkar, Ashok K.
 CORPORATE SOURCE: Department of Chemistry, McGill University, Montreal,
 QC, H3A 2K6, Can.
 SOURCE: Organometallics (1998), 17(9), 1798-1811
 CODEN: ORGND7; ISSN: 0276-7333
 PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

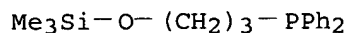
- AB A general synthetic approach based on the hydrolysis of aminosilanes R'_3Si-NR_2 with organic compds. containing acidic protons, to construct thin films of donor ligands on inorg. oxide surfaces that are subsequently used to support a variety of organometallic complexes, is reported. The reaction of surface hydroxyl groups on SiO_2 , glass, quartz, and single-crystal Si with $SiCl_4$, followed by NET_2H , affords surface-anchored Si- NET_2 moieties which, upon simple acid-base hydrolysis with $HO(CH_2)_nXR_2$ ($n = 3$, $X = N$, $R = Et$; $n = 3$, $X = P$, $R = Ph$; $n = 4$, $X = P$, $R = Et$), $n-HOC_6H_4XR_2$ ($X = P$, $R = Ph$, $n = 2$; $X = N$, $R = Et$, $n = 3$), and $HOCHMe(CH_2)_3NET_2$ at ambient temperature, yield thin films containing terminal phosphine and amine donor ligands. These ligands are then used to covalently anchor organometallic complexes of $Ni(0)$, $Rh(I)$, $Ru(II)$, and $Pd(0)$ via bridge-splitting or ligand-displacement reactions. The synthesis of solution models to the surface-bound species and the characterization of the latter using numerous surface anal. techniques proved useful in determining the conditions for the deposition process and in the evaluation of the structure of the supported metal complexes. A thin film of $[Si]-O-(CH_2)_3PPh_2Ni(CO)_2PPh_3$ on glass catalyzes the oligomerization of phenylacetylene resulting in a product distribution different from that of a similar reaction in solution. The enhanced activity and selectivity of the organometallic $Ni(0)$ thin films suggests that a pos. role is played by the orientation of the surface-bound organometallic species in catalysis.
- CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 29, 67
- ST catalyst oligomerization phenylacetylene nickel complex film; cyclotrimerization phenylacetylene nickel complex film catalyst; aminosilane surface anchored alcoholysis functionalized alc; thin film metal complex hydrolytic prepn; silica supported metal complex thin film
- IT Transition metal complexes
RL: SPN (Synthetic preparation); PREP (Preparation)
(amine; preparation of thin film silica-bound transition metal siloxyalkylamine complexes via alcoholysis of anchored aminosilane with amino-functionalized alcs.)
- IT Silanes
RL: RCT (Reactant); RACT (Reactant or reagent)
(amino; preparation of thin film silica-bound transition metal siloxyalkylamine or -phosphine complexes via alcoholysis of anchored aminosilane with amino- or phosphino-functionalized alcs.)
- IT X-ray photoelectron spectra
(of thin film silica-bound transition metal siloxyalkylamine or -phosphine complexes)
- IT Transition metal complexes
RL: SPN (Synthetic preparation); PREP (Preparation)
(phosphine; preparation of thin film silica-bound transition metal siloxyalkylphosphine complexes via alcoholysis of anchored aminosilane with phosphino-functionalized alcs.)
- IT Alcoholysis
Ultrathin films
(preparation of thin film silica-bound transition metal siloxyalkylamine or -phosphine complexes via alcoholysis of anchored aminosilane with amino- or phosphino-functionalized alcs.)
- IT Amines, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(silyl; preparation of thin film silica-bound transition metal siloxyalkylamine or -phosphine complexes via alcoholysis of anchored aminosilane with amino- or phosphino-functionalized alcs.)

- IT Hydroxyl group
RL: RCT (Reactant); RACT (Reactant or reagent)
(surface; preparation of thin **film** silica-bound transition metal siloxyalkylamine or -phosphine complexes via alcoholysis of anchored aminosilane with amino- or phosphino-functionalized alcs.)
- IT Amines, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(transition metal complexes; preparation of thin **film** silica-bound transition metal siloxyalkylamine complexes via alcoholysis of anchored aminosilane with amino-functionalized alcs.)
- IT Phosphines
RL: SPN (Synthetic preparation); PREP (Preparation)
(transition metal complexes; preparation of thin **film** silica-bound transition metal siloxyalkylphosphine complexes via alcoholysis of anchored aminosilane with phosphino-functionalized alcs.)
- IT 91-68-9DP, silica-bound 622-93-5DP, silica-bound 2360-09-0DP, silica-bound 5412-69-1DP, silica-bound 55759-76-7DP, silica-bound 60254-10-6DP, silica-bound
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(alcoholysis of aminosilanes anchored on glass, silica, quartz, or single-crystal silicon and subsequent functionalization with transition metal complexes to give thin **films**)
- IT 204978-36-9DP, silica-bound 204978-37-0DP, silica-bound 204978-38-1DP, silica-bound 204978-39-2DP, silica-bound 204978-40-5DP, silica-bound 204978-41-6DP, silica-bound 204978-42-7DP, silica-bound 204978-43-8DP, silica-bound 204978-44-9DP, silica-bound 204978-45-0DP, silica-bound 204978-46-1DP, silica-bound 204978-47-2DP, silica-bound
RL: SPN (Synthetic preparation); PREP (Preparation)
(alcoholysis of aminosilanes anchored on glass, silica, quartz, or single-crystal silicon and subsequent functionalization with transition metal complexes to give thin **films**)
- IT 536-74-3, Phenylacetylene
RL: RCT (Reactant); RACT (Reactant or reagent)
(oligomerization of phenylacetylene catalyzed by soluble siloxyalkylphosphine nickel complex or thin **film** silica-bound nickel complex)
- IT 612-71-5P, 1,3,5-Triphenylbenzene 1165-53-3P, 1,2,4-Triphenylbenzene 78486-45-0P, 1,3,6-Triphenylhex-1-yne-3,5-diene
RL: SPN (Synthetic preparation); PREP (Preparation)
(oligomerization of phenylacetylene catalyzed by soluble siloxyalkylphosphine nickel complex or thin **film** silica-bound nickel complex)
- IT 38033-47-5P 38073-65-3P 105272-29-5P 170646-77-2P 204978-22-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and coordination to transition metal complex)
- IT 38073-65-3P 170646-77-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and coordination to transition metal complex)
- RN 38073-65-3 HCAPLUS
CN Phosphine, diethyl[4-[(trimethylsilyl)oxy]butyl]- (9CI) (CA INDEX NAME)



RN 170646-77-2 HCAPLUS

CN Phosphine, diphenyl[3-[(trimethylsilyl)oxy]propyl]- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 51 THERE ARE 51 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 20 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1998:70066 HCAPLUS

DOCUMENT NUMBER: 128:148829

TITLE: Conformation control in polymetallic mesocycles by metal-metal bonding: the first example of an Hg-Cu interaction

AUTHOR(S): Benard, Marc; Bodensieck, Ulf; Braunstein, Pierre; Knorr, Michael; Strampfer, Martin; Strohmman, Carsten

CORPORATE SOURCE: Lab. Chimie Coordination, URA CNRS, Univ. Louis Pasteur, Strasbourg, F-67070, Fr.

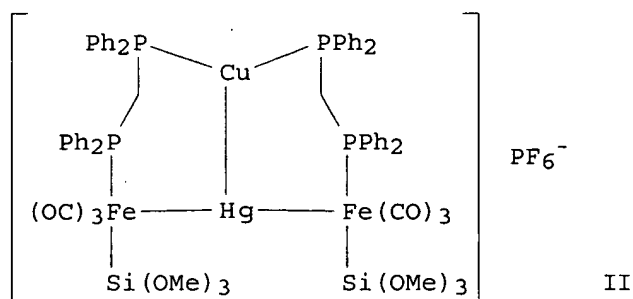
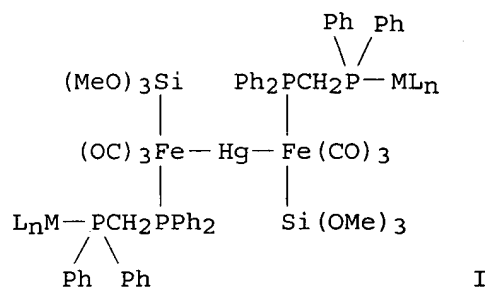
SOURCE: Angewandte Chemie, International Edition in English (1998), Volume Date 1997, 36(24), 2758-2761
CODEN: ACIEAY; ISSN: 0570-0833

PUBLISHER: Wiley-VCH Verlag GmbH

DOCUMENT TYPE: Journal

LANGUAGE: English

GI



AB The first example is reported of an attractive Cu-Hg interaction as well as its transannular orientation which detes. the conformation of a cyclic polymetallic complex. Reaction of heterotrinuclear complex $(\text{OC})_3\{(\text{MeO})_3\text{Si}\}(\eta^1\text{-Ph}_2\text{PCH}_2\text{PPh}_2)\text{Fe-Hg-Fe}(\eta^1\text{-Ph}_2\text{PCH}_2\text{PPh}_2)\{\text{Si}(\text{OMe})_3\}(\text{CO})_3$ with 2 equiv $[\text{AuBr}(\text{tht})]$ (tht =

tetrahydrothiophene) in CH₂Cl₂ gave air-stable chain complex I (MLn = AuBr). Treatment of I with [Cu(NCMe)₄]PF₆ in cold CH₂Cl₂ formed I₂+(PF₆)₂ [MLn = Cu(NCMe)₂] which, when dissolved in CH₂Cl₂ at room temperature, afforded heterometallocycle II containing a Cu-Hg interaction. An x-ray crystal structure of II·4CH₂Cl₂ revealed a Cu-Hg distance of 2.689(2) Å (sum of Pauling covalent radii = 2.61 Å). Although the short Cu-Hg distance cannot be ascribed to a definite metal-metal bond, the T-shape of complex II allows the two metal atoms to approach each other to the limits of their covalent radii without developing the repulsion characteristic of pair-pair interactions. EHMO calcns. of [Hg{Fe[Si(OH)₃](CO)₃(μ-H₂PCH₂PH₂)}₂Cu]⁺ and the fluxionality of II are discussed.

CC 78-7 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 65, 75

ST crystal structure **copper** mercury iron mesocycle; structure **copper** mercury iron dppm mesocycle; metal metal bond **copper** mercury heterometallocycle; **copper** mercury iron heterometallocycle prepn structure; fluxionality **copper** mercury iron dppm heterometallocycle; conformation polymetallic mesocycle **copper** mercury interaction; electron configuration **copper** mercury iron mesocycle

IT Conformation

(conformation control in polymetallic **copper** mercury iron μ-dppm mesocycle by Hg-Cu interaction)

IT Bond

(**copper**-mercury; conformation control in polymetallic **copper** mercury iron μ-dppm mesocycle by Hg-Cu interaction)

IT Electron configuration

(of **copper** mercury iron μ-diphosphine metallocycle with Cu-Hg interaction from EHMO calcns.)

IT Crystal structure

Molecular structure

(of **copper** mercury iron μ-dppm mesocycle with Cu-Hg interaction)

IT 7439-97-6, Mercury, properties

RL: PRP (Properties)

(bonding interaction with **copper** in polymetallic **copper** mercury iron μ-dppm mesocycle)

IT 7440-50-8, **Copper**, properties

RL: PRP (Properties)

(bonding interaction with mercury in polymetallic **copper** mercury iron μ-dppm mesocycle)

IT 64443-05-6, Tetrakis(acetonitrile)**copper**(1+) hexafluorophosphate

RL: RCT (Reactant); RACT (Reactant or reagent)

(for substitution of coordinated gold in mercury iron μ-dppm gold chain complex)

IT 202289-13-2P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (preparation and crystal structure, with **copper**-mercury interaction)

IT 202194-83-0P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and substitution of coordinated gold in mercury iron μ-dppm gold chain complex with **copper** complex)

IT 202194-87-4P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (preparation, mol. structure, conformational control by **copper** -mercury interaction, and fluxionality of)

IT 142563-99-3

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction with gold tetrahydrothiophene bromide)

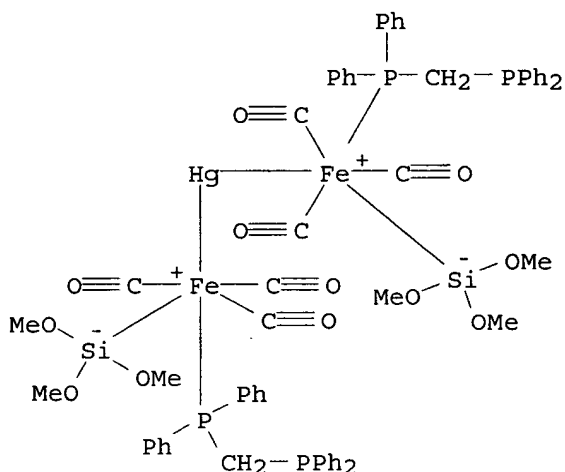
IT 142563-99-3

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction with gold tetrahydrothiophene bromide)

RN 142563-99-3 HCAPLUS

CN Iron, hexacarbonylbis[[(diphenylphosphino)methyl]diphenylphosphine- κ P](mercury)bis(trimethoxysilyl)di-, (2Fe-Hg), stereoisomer (9CI)
(CA INDEX NAME)



REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 21 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1997:339680 HCAPLUS

DOCUMENT NUMBER: 127:34310

TITLE: The role of lithium 1,3-bis(trimethylsilyl)-1-aza-allyls in phosphorus chemistry

AUTHOR(S): Hitchcock, Peter B.; Lappert, Michael F.; Layh, Marcus
CORPORATE SOURCE: Chem. Lab., Univ. Sussex, Brighton, BN1 9QJ, UK

SOURCE: Journal of Organometallic Chemistry (1997), 529(1-2), 243-255

CODEN: JORCAI; ISSN: 0022-328X

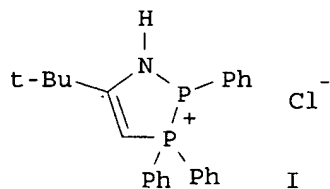
PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 127:34310

GI



AB Treatment of the Li 1-aza-allyl $[\text{Li}\{\text{N}(\text{R})\text{C}(\text{tBu})\text{CHR}\}]_2$ (1) with PCl_3 gave in

poor yields the trans-P,P'-dichlorodiazadiphosphetidine ClPN(R')P(Cl)NR' 3 (R = SiMe₃, R' = C(tBu):C(H)SiMe₃). An improved route to 3 was based on [{Cu(μ-N(R)C(tBu)CHR)}₂] and PCl₃; but the method of choice involved conversion of 1 into successively the imine RN:C(tBu)CHR₂ (4) (which upon heating gave the isomeric enamine) and Cl₂PN:C(tBu)CHR₂ (6) and thermolysis of 6. The imine RN:C(tBu)CH(R)PPh₂ (7), obtained from 1 and Ph₂PCl, was isomerized into the Z-enamine R₂NC(tBu)=C(H)PPh₂ (8), which upon irradiation gave a mixture of 8 and its E-isomer 9. Treatment of 7 with R''PCl₂ or PCl₃ gave the cyclic phosphonium chlorides [Ph₂PP(R'')N(H)C(tBu):CH]Cl (10 R'' = Ph (shown as I), or R'' = Et) or [Ph₂PP(Cl)N(R)C(tBu):CH]Cl 12; 12 with AgOSO₂CF₃ or Na[BPh₄] afforded [Ph₂PP(Cl)N(R)C(tBu)=CH]A (A = CF₃SO₃, BPh₄). The enamines RN:C(tBu)CH(X)R (X = Cl, I) were obtained from 1 and POCl₃ or ICl, resp., and the enamine R₂NC(Ph):CR₂ (R = SiMe₃) was obtained from the Li 1-aza-allyl [Li{N(R)C(Ph)CR₂}(THF)] and CF₃SO₃SiMe₃. The products were characterized by multinuclear NMR spectroscopy and (in most cases) MS; single crystal x-ray diffraction data are provided for 3 and 10.

CC 29-7 (Organometallic and Organometalloidal Compounds)

Section cross-reference(s): 23, 28, 75

IT 161897-44-5

RL: RCT (Reactant); RACT (Reactant or reagent)
(for preparation of **copper** analog, enamines and phosphorus compds.)

IT 190847-70-2P, (E)-(1-tert-Butyl-2-(diphenylphosphino)vinyl)bis(tri methylsilyl)amine

RL: SPN (Synthetic preparation); PREP (Preparation)
(formation by photoisomerization)

IT 190847-69-9P, (Z)-(1-tert-Butyl-2-(diphenylphosphino)vinyl)bis(tri methylsilyl)amine

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and photoisomerization of)

IT 190847-68-8P, (1-Diphenylphosphino-1-trimethylsilyl-3,3-dimethyl-2-butyldiene)(trimethylsilyl)amine

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and reactions with phosphorus compds.)

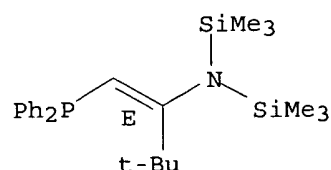
IT 190847-70-2P, (E)-(1-tert-Butyl-2-(diphenylphosphino)vinyl)bis(tri methylsilyl)amine

RL: SPN (Synthetic preparation); PREP (Preparation)
(formation by photoisomerization)

RN 190847-70-2 HCAPLUS

CN Silanamine, N-[(1E)-1-[(diphenylphosphino)methylene]-2,2-dimethylpropyl]-1,1,1-trimethyl-N-(trimethylsilyl)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

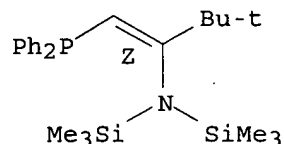


IT 190847-69-9P, (Z)-(1-tert-Butyl-2-(diphenylphosphino)vinyl)bis(tri methylsilyl)amine

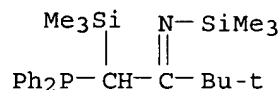
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and photoisomerization of)

RN 190847-69-9 HCAPLUS
 CN Silanamine, N-[(1Z)-1-[(diphenylphosphino)methylene]-2,2-dimethylpropyl]-1,1,1-trimethyl-N-(trimethylsilyl)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



IT 190847-68-8P, (1-Diphenylphosphino-1-trimethylsilyl-3,3-dimethyl-2-butyldiene)(trimethylsilyl)amine
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and reactions with phosphorus compds.)
 RN 190847-68-8 HCAPLUS
 CN Silanamine, N-[1-[(diphenylphosphino)(trimethylsilyl)methyl]-2,2-dimethylpropylidene]-1,1,1-trimethyl- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 22 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1995:1006724 HCAPLUS
 DOCUMENT NUMBER: 124:71627
 TITLE: Selective metalization process
 INVENTOR(S): Calabrese, Gary S.; Calvert, Jeffrey M.; Chen, Mu San; Dressick, Walter J.; Dulcey, Charles S.; Georger, Jacques H., Jr.; Bohland, John F. Jr.
 PATENT ASSIGNEE(S): Shipley Company, L.L.C., USA
 SOURCE: U.S., 15 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5468597	A	19951121	US 1993-111640	19930825
JP 07166372	A2	19950627	JP 1994-224208	19940825
EP 729293	A1	19960828	EP 1994-120125	19941219
EP 729293	B1	20020403		
R: DE, FR, GB, IT				
US 5510216	A	19960423	US 1995-520554	19950829
PRIORITY APPLN. INFO.:			US 1993-111640	A 19930825
			US 1994-226352	B1 19940412

AB The invention is directed to a process for patterning a substrate in a selective pattern. In one embodiment, the process comprises the steps of forming a patterned coating over a substrate surface whereby portions of the substrate are covered by the patterned coating and portions of the

substrate remain uncoated. A layer of a ligating material is coated over at least those portions of the substrate free of the patterned coating. The ligating layer is one that is capable of ligating with an electroless metal plating catalyst. The article so formed is then contacted with an electroless metalization catalyst and then with an electroless plating solution to form a patterned metal deposit on the substrate.

IC ICM G03F007-00

INCL 430315000

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT Electric apparatus

Semiconductor devices

(selective metalization process using ligating surface catalytic to electroless metal deposition for manufacture of)

IT 1760-24-3 **18586-39-5**, 2-(Diphenylphosphino)ethyltriethoxysilane
27326-65-4, 2-(Trimethoxysilyl)ethyl-2-pyridine 35141-30-1 75822-22-9
RL: CAT (Catalyst use); DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

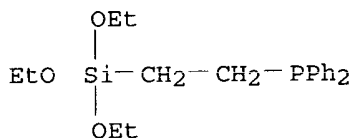
(selective metalization process using ligating surface catalytic to electroless metal deposition)

IT **18586-39-5**, 2-(Diphenylphosphino)ethyltriethoxysilane
RL: CAT (Catalyst use); DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(selective metalization process using ligating surface catalytic to electroless metal deposition)

RN 18586-39-5 HCAPLUS

CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



L58 ANSWER 23 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:733951 HCAPLUS

DOCUMENT NUMBER: 123:340243

TITLE: A convenient molecular self-assembly route to thin films containing terminal donor ligands and anchored organotransition-metal complexes for heterogenized homogeneous catalysis

AUTHOR(S): Petrucci, Maria G. L.; Kakkar, Ashok K.

CORPORATE SOURCE: Dep. Chem., McGill Univ., Montreal, QC, H3A 2K6, Can.

SOURCE: Journal of the Chemical Society, Chemical Communications (1995), (15), 1577-8
CODEN: JCCCCAT; ISSN: 0022-4936

PUBLISHER: Royal Society of Chemistry

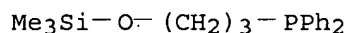
DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 123:340243

AB Simple acid-base hydrolytic chemical on the surfaces of glass, quartz or Si provides an easy access to thin films containing terminal amine and phosphine donor ligands which covalently bind a variety of organometallic complexes, and such oriented ultrathin films supporting a densely packed Ni(0) organometallic complex on glass, catalyze oligomerization of phenylacetylene.

- CC 29-6 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 25, 57, 67, 78
- IT 7440-21-3DP, Silicon, reaction products with 14808-60-7DP, Quartz (SiO₂), reaction products with
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(convenient mol. self-assembly route to thin **films** containing terminal donor ligands and anchored organotransition-metal complexes for heterogenized homogeneous catalysis)
- IT 536-74-3, Phenylacetylene 2360-09-0 5068-21-3 13007-90-4, Dicarboxylbis(triphenylphosphine)nickel 14523-22-9, Chlorodicarbonylrhodium dimer 14694-95-2, Chlorotris(triphenylphosphine)rhodium
RL: RCT (Reactant); RACT (Reactant or reagent)
(convenient mol. self-assembly route to thin **films** containing terminal donor ligands and anchored organotransition-metal complexes for heterogenized homogeneous catalysis)
- IT 996-50-9P, (Diethylamino)trimethylsilane 170646-76-1P
170646-77-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(convenient mol. self-assembly route to thin **films** containing terminal donor ligands and anchored organotransition-metal complexes for heterogenized homogeneous catalysis)
- IT 612-71-5P, 1,3,5-Triphenylbenzene 1165-53-3P, 1,2,4-Triphenylbenzene 170646-78-3P 170646-79-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(convenient mol. self-assembly route to thin **films** containing terminal donor ligands and anchored organotransition-metal complexes for heterogenized homogeneous catalysis)
- IT **170646-77-2P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(convenient mol. self-assembly route to thin **films** containing terminal donor ligands and anchored organotransition-metal complexes for heterogenized homogeneous catalysis)
- RN 170646-77-2 HCAPLUS
- CN Phosphine, diphenyl[3-[(trimethylsilyl)oxy]propyl]- (9CI) (CA INDEX NAME)



L58 ANSWER 24 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:559767 HCAPLUS

DOCUMENT NUMBER: 122:304513

TITLE: Metallic foil with adhesion-promoting layer

INVENTOR(S): Poutasse, Charles A., III; Kovacs, Andrea M.

PATENT ASSIGNEE(S): Gould Electronics Inc., USA

SOURCE: Eur. Pat. Appl., 23 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 637902	A1	19950208	EP 1994-305740	19940803

EP 637902 B1 19990331
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE
 AT 178451 E 19990415 AT 1994-305740 19940803
 JP 07170064 A2 19950704 JP 1994-185028 19940805
 CN 1106977 A 19950816 CN 1994-115038 19940805

PRIORITY APPLN. INFO.: US 1993-103075 A 19930806

OTHER SOURCE(S): MARPAT 122:304513

AB This invention relates to a metallic foil, especially for printed-circuit boards, with an adhesion-promoting layer overlying ≥ 1 side of the foil, the adhesion-promoting layer comprising ≥ 1 silane coupling agent, the base surface of the foil underlying the adhesion-promoting layer being characterized by the absence of added surface roughening, the absence of Cr, and the absence of a layer of Zn or Cr adhered to the base surface.

IC ICM H05K003-38

ICS C25D005-48

CC 76-3 (Electric Phenomena)

IT 7429-90-5, Aluminum, uses 7439-98-7, Molybdenum, uses 7440-02-0, Nickel, uses 7440-31-5, Tin, uses 7440-47-3, Chromium, uses 7440-48-4, Cobalt, uses 7440-50-8, Copper, uses 7440-66-6, Zinc, uses 7440-74-6, Indium, uses 12597-70-5, Bronze 12597-71-6, Brass, uses 54134-51-9

RL: DEV (Device component use); USES (Uses)

(metallic foil with adhesion-promoting layer)

IT 75-94-5, Vinyl trichloro silane 78-08-0, Vinyl triethoxy silane 107-37-9, Allyltriethoxy silane 919-30-2 919-31-3, 2-Cyanoethyl triethoxy silane 1067-47-6, 3-Cyanopropyl triethoxy silane 1067-53-4, Vinyltris(2-methoxyethoxy) silane 1071-22-3, 2-Cyanoethyl trichloro silane 1071-27-8, 3-Cyanopropyl trichloro silane 1558-24-3, (Dichloromethyl) trichloro silane 1558-25-4, Chloromethyl trichloro silane 1760-24-3 2526-62-7, 2-Cyanoethyl trimethoxy silane 2530-83-8 2530-85-0 2530-86-1, (N,N-Dimethyl-3-aminopropyl) trimethoxy silane 2530-87-2, 3-Chloropropyl trimethoxy silane 2550-04-1, Allyl triethoxy silane 2550-06-3, 3-Chloropropyl trichloro silane 2551-83-9, Allyl trimethoxy silane 2768-02-7 3068-76-6, N-Phenylaminopropyl trimethoxy silane 3069-25-8, N-Methyl amino propyl trimethoxy silane 3069-30-5, 4-Aminobutyl triethoxy silane 3090-12-8 3388-04-3, β -(3,4-Epoxy cyclohexyl)ethyl trimethoxy silane 4369-14-6 4420-74-0, 3-Mercaptopropyl trimethoxy silane 5089-70-3, 3-Chloropropyl triethoxy silane 5356-88-7 6233-20-1, 2-Chloroethyl trichloro silane 7351-61-3, 3-Methacryloxypropyl trichloro silane 7538-44-5 7787-82-8 13688-90-9 13822-56-5 13883-39-1, 3-Bromopropyl trichloro silane 14814-09-6, 3-Mercaptopropyl triethoxy silane 14867-28-8, 3-Iodopropyltrimethoxy silane 15188-09-7 15267-95-5, Chloromethyl triethoxy silane 15332-99-7, Vinyl triisopropenoxy silane 17082-69-8, 2-[2-(Trichlorosilyl)ethyl] pyridine 17082-70-1 17945-05-0 18023-33-1, Vinyltriisopropoxysilane 18098-86-7 18147-81-4 18204-80-3, 2-Acetoxyethyl trichloro silane 18279-67-9, 2-Chloroethyl triethoxy silane 18290-60-3 18586-39-5, 2-(Diphenylphosphino) ethyl triethoxy silane 18817-29-3 23779-32-0 24413-04-5, p-(Chloromethyl) phenyl trimethoxy silane 24801-88-5, 3-Isocyanatopropyl triethoxy silane 24820-56-2 26571-79-9 27137-85-5, (Dichlorophenyl) trichloro silane 27326-65-4, β -Trimethoxysilyl ethyl-2-pyridine 27752-77-8, Bromophenyl trichloro silane 28106-60-7 29385-30-6 29765-01-3 33580-59-5, 3-Methoxypropyl trimethoxy silane 34038-71-6, N-[3-(Triethoxysilyl)propyl]phthalamic acid 34390-21-1, Bromophenyl trimethoxy silane 34390-22-2, Aminophenyl trimethoxy silane 34708-08-2 35141-30-1 35141-36-7 38595-89-0 40762-31-0 41051-80-3 51826-90-5, 3-Bromopropyl trimethoxy silane 51895-58-0 58068-97-6, N-[3-(Triethoxysilyl)propyl]-4,5-dihydroimidazole 58505-58-1

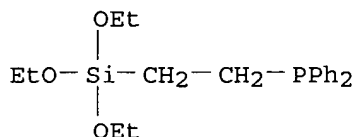
59004-18-1, 3-Acetoxypropyl trimethoxy silane 61633-26-9 62604-61-9,
 3-[2-N-Benzylaminoethylaminopropyl] trimethoxy silane 62641-06-9
 65282-12-4 68128-25-6 68479-61-8 70880-05-6 70892-80-7,
 8-Bromooctyl trichloro silane 71783-41-0, N-[3-(Triethoxysilyl)propyl]-
 2,4-dinitrophenylamine 75822-22-9 79793-00-3 80906-67-8,
 N-(3-Trimethoxysilylpropyl) pyrrole 82887-05-6,
 Diethylphosphatoethyltriethoxy silane 82985-34-0, 8-Bromooctyl
 trimethoxy silane 87994-64-7 94194-98-6, N-(2-Aminoethyl-3-
 aminopropyl) tris(2-ethylhexoxy) silane 102056-64-4 111537-13-4
 122630-66-4, 3-(1-Aminopropoxy)-3,3-dimethyl-1-propenyl trimethoxy silane
 123198-57-2, N-(3-Acryloxy-2-hydroxypropyl)-3-aminopropyltriethoxysilane
 125109-83-3 126519-89-9 128850-89-5 129119-78-4 147366-30-1
 154265-34-6 159347-47-4 163155-52-0, 3-(N-Styrylmethyl-2-
 aminoethylamino) propyltrimethoxy silane 163155-54-2 163155-55-3
 163155-56-4 163155-57-5 163155-58-6 163236-80-4

RL: DEV (Device component use); NUU (Other use, unclassified); USES (Uses)
 (metallic foil with adhesion-promoting layer containing)

IT 18586-39-5, 2-(Diphenylphosphino) ethyl triethoxy silane
 RL: DEV (Device component use); NUU (Other use, unclassified); USES (Uses)
 (metallic foil with adhesion-promoting layer containing)

RN 18586-39-5 HCAPLUS

CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX
 NAME)



L58 ANSWER 25 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1994:145015 HCAPLUS

Correction of: 1991:520755

DOCUMENT NUMBER: 120:145015

Correction of: 115:120755

TITLE: Chemically bonded chelates as selective complexing
 sorbents for gas chromatography. I. Alkenes

AUTHOR(S): Wasiak, W.

CORPORATE SOURCE: Fac. Chem., A. Mickiewicz Univ., Poznan, 60-780, Pol.

SOURCE: Journal of Chromatography (1991), 547(1-2), 259-68

CODEN: JOCRAM; ISSN: 0021-9673

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Column packings containing β -diketonate chelates of Cu(II) and Ni(II)
 chemical bonded to phosphinated silica surfaces can be used to sep.
 nucleophilic species by metal complex formation. These sorbents are
 capable of selectively retaining unsatd. linear and cyclic hydrocarbons.
 The packing properties depend on both the metal and the ligand. The
 influence of electronic effects on the retention of donors is discussed.

CC 66-3 (Surface Chemistry and Colloids)

Section cross-reference(s): 78, 80

ST gas chromatog sorbent diketonate chelate; phosphinated silica bonded
 chelate chromatog sorbent; unsatd hydrocarbon sepn gaschromatog;
copper diketonate silica surface bonded phase; nickeldiketonate
 silica bonded phase chromatog; nucleophile sepn chromatogsurface bonded
 chelate

IT 120512-82-5D, 1-(Triethoxysilyl)-2-(m-

(diphenylphosphinylmethyl)phenyl)ethane, reaction products with silica gel
 120532-05-0D, 1-(Triethoxysilyl)-2-(p-
 (diphenylphosphinylmethyl)phenyl)ethane, reaction products with silica gel
 RL: PRP (Properties)

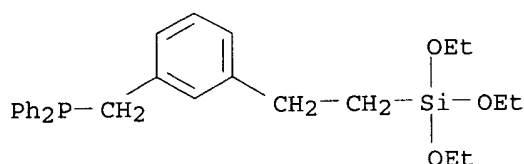
(surface, in gas chromatog. sorbent preparation)

IT 120512-82-5D, 1-(Triethoxysilyl)-2-(m-
 (diphenylphosphinylmethyl)phenyl)ethane, reaction products with silica gel
 120532-05-0D, 1-(Triethoxysilyl)-2-(p-
 (diphenylphosphinylmethyl)phenyl)ethane, reaction products with silica gel
 RL: PRP (Properties)

(surface, in gas chromatog. sorbent preparation)

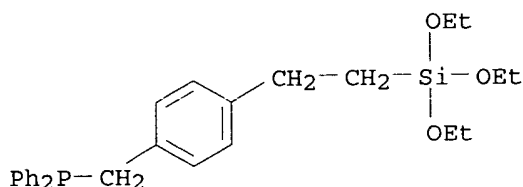
RN 120512-82-5 HCAPLUS

CN Phosphine, diphenyl[[3-[2-(triethoxysilyl)ethyl]phenyl]methyl]- (9CI) (CA
 INDEX NAME)



RN 120532-05-0 HCAPLUS

CN Phosphine, diphenyl[[4-[2-(triethoxysilyl)ethyl]phenyl]methyl]- (9CI) (CA
 INDEX NAME)



L58 ANSWER 26 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1994:80665 HCAPLUS

DOCUMENT NUMBER: 120:80665

TITLE: Selective hydrogen separation by palladium-based
 composite membranes

AUTHOR(S): Aksnes, Elin; Dahl, Ivar; Stori, Aage

CORPORATE SOURCE: SINTEF SI, Oslo, N-0314, Norway

SOURCE: SINTEF Rep. (1993), STF28 A93013, 10 pp.

CODEN: SIRAD4; ISSN: 0333-2578

DOCUMENT TYPE: Report

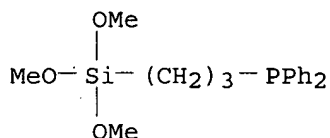
LANGUAGE: English

AB Polymer-based composite Pd-Ag membranes were prepared by sputtering of
 Pd70Ag30 alloy onto a polymer substrate [i.e., polysulfone (ICI Victrex
 P1000) or substituted polysilanes] to form 0.02-1-μm thin films
 . The films were stable at room temperature, and good adhesion of the
 alloy to the polymer substrate was observed. The polysulfone substrate-based
 membrane was considered the most promising. The membranes with the
 thinner alloy films were the most stable towards mech. and chemical
 stresses induced by cycling of the H pressure.

CC 49-9 (Industrial Inorganic Chemicals)

Section cross-reference(s): 38, 56

IT 4420-74-0, A-189 25667-42-9, Victrex P 1000 52090-19-4
 RL: USES (Uses)
 (composite palladium-silver alloy membranes containing, for selective separation of hydrogen)
 IT 52090-19-4
 RL: USES (Uses)
 (composite palladium-silver alloy membranes containing, for selective separation of hydrogen)
 RN 52090-19-4 HCAPLUS
 CN Phosphine, diphenyl[3-(trimethoxysilyl)propyl]- (9CI) (CA INDEX NAME)



L58 ANSWER 27 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1994:56153 HCAPLUS
 DOCUMENT NUMBER: 120:56153
 TITLE: Silane coupling agents for metalization of polymeric substrates
 INVENTOR(S): Swei, Gwo; Kristal, Kenneth W.
 PATENT ASSIGNEE(S): Rogers Corp., USA
 SOURCE: U.S., 7 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5233067	A	19930803	US 1990-522375	19900508
PRIORITY APPLN. INFO.:			US 1990-522375	19900508

AB Polymeric substrates are metalized by contacting the surface of an etched substrate with a difunctional silane coupling agent and then depositing a metallic layer over the surface. Melt-extruded TE-97645 substrate was etched, treated successively with CH₂:CHSi(OMe)₃ (I) and HS(CH₂)₃Si(OMe)₃ (II), dried, baked, and coated electrolessly with Cu to give a sample showing peel strength 13-15 lb/in and no significant reduction after thermal aging, compared with 7 and significant reduction, resp., for a similar sample without I and II.

IC ICM C07F007-08
 ICS C07F007-10; C07F007-18

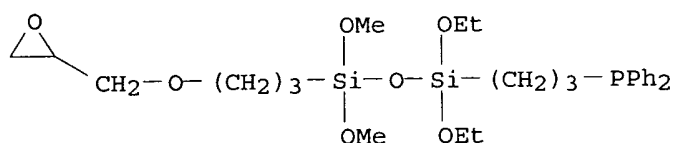
INCL 556427000

CC 38-2 (Plastics Fabrication and Uses)
 Section cross-reference(s): 56

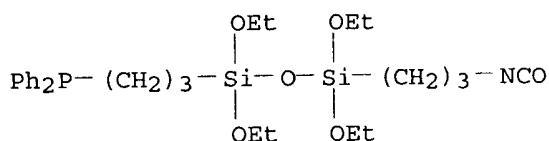
ST silane coupling agent polymer metalization; vinyltrimethoxysilane coupling agent polymer metalization; mercaptopropyltrimethoxysilane coupling agent polymer metalization; copper plating polymer alkoxysilane

IT 151535-58-9 151535-59-0 151535-60-3 151535-61-4
 151535-62-5 151535-63-6 151535-64-7 151535-65-8 151535-66-9
 151535-67-0 151535-68-1
 RL: USES (Uses)

(coupling agent, for polymer metalization)
 IT 7440-50-8, **Copper**, uses
 RL: USES (Uses)
 (plating by, of silane coupling agent-pretreated polymer)
 IT 151535-59-0 151535-61-4
 RL: USES (Uses)
 (coupling agent, for polymer metalization)
 RN 151535-59-0 HCAPLUS
 CN Phosphine, [3-[1,1-diethoxy-3,3-dimethoxy-3-[3-(oxiran-2-ylmethoxy)propyl]disiloxanyl]propyl]diphenyl- (9CI) (CA INDEX NAME)



RN 151535-61-4 HCAPLUS
 CN Phosphine, [3-[1,1,3,3-tetraethoxy-3-(3-isocyanatopropyl)disiloxanyl]propyl]diphenyl- (9CI) (CA INDEX NAME)



L58 ANSWER 28 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1994:39111 HCAPLUS
 DOCUMENT NUMBER: 120:39111
 TITLE: Chemically bonded chelates as selective complexing sorbents for gas chromatography. II. Ketones, ethers and nitroalkanes
 AUTHOR(S): Wasiak, W.
 CORPORATE SOURCE: Faculty of Chemistry, Adam Mickiewicz University, Grunwaldzka 6, Poznan, 60-780, Pol.
 SOURCE: Journal of Chromatography (1993), 653(1), 63-9
 CODEN: JOCRAM; ISSN: 0021-9673
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Specific interactions were studied for some ketones, ethers, and nitroalkanes with Cu(II) and Ni(II) acetylacetonates chemical bonded to silica surfaces (using 1-(triethoxysilyl)-2-(3-(or 4-((diphenylphosphino)methyl)phenyl)ethane as grafting agents). A number of relations between the structure of adsorbates and the retention parameters are described. The differences in specific interactions were sufficient to enable the separation of isomer-containing mixts.
 CC 66-3 (Surface Chemistry and Colloids)
 Section cross-reference(s): 22, 29, 78, 80
 ST bonded chelate selective sorbent gas chromatog; ketone ether nitroalkane sepn gas chromatog; isomer sepn bonded chelate chromatog phase; phosphine ligand grafted silica chromatog phase; **copper** nickel diketonate bonded chromatog phase
 IT 3264-82-2D, Nickel acetylacetonate, reaction products with phosphine

ligand-grafted silica 13395-16-9D, **Copper** acetylacetonate,
reaction products with phosphine ligand-grafted silica

RL: PRP (Properties)

(surface, gas chromatog. bonded phase, ether and ketone and nitroalkane
retention on)

IT 120512-82-5D, 1-(Triethoxysilyl)-2-(3-
((diphenylphosphino)methyl)phenyl)ethane, reaction products with silica
120532-05-0D, 1-(Triethoxysilyl)-2-(4-
((diphenylphosphino)methyl)phenyl)ethane, reaction products with silica
RL: PRP (Properties)

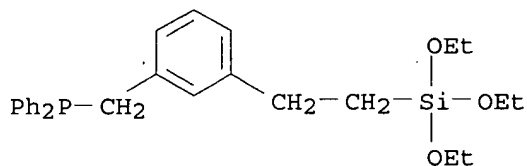
(surface, gas chromatog. chelate bonded phase precursor)

IT 120512-82-5D, 1-(Triethoxysilyl)-2-(3-
((diphenylphosphino)methyl)phenyl)ethane, reaction products with silica
120532-05-0D, 1-(Triethoxysilyl)-2-(4-
((diphenylphosphino)methyl)phenyl)ethane, reaction products with silica
RL: PRP (Properties)

(surface, gas chromatog. chelate bonded phase precursor)

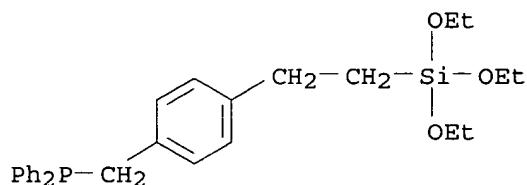
RN 120512-82-5 HCAPLUS

CN Phosphine, diphenyl[[3-[2-(triethoxysilyl)ethyl]phenyl]methyl] - (9CI) (CA
INDEX NAME)



RN 120532-05-0 HCAPLUS

CN Phosphine, diphenyl[[4-[2-(triethoxysilyl)ethyl]phenyl]methyl] - (9CI) (CA
INDEX NAME)



L58 ANSWER 29 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1993:518126 HCAPLUS

DOCUMENT NUMBER: 119:118126

TITLE: Heat-resistant aromatic polyimides including
triphenylphosphine groups

INVENTOR(S): Yamashita, Mitsuhiro; Imai, Yoshio; Kakimoto, Masaaki

PATENT ASSIGNEE(S): Tokuyama Soda Kk, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

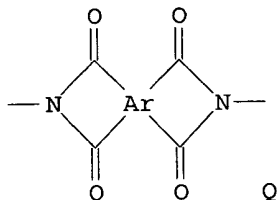
PATENT NO.

KIND DATE

APPLICATION NO.

DATE

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JP 05059172	A2	19930309	JP 1991-217409	19910828
PRIORITY APPLN. INFO.:			JP 1991-217409	19910828
GI				



AB Title organic solvent-soluble polyimides with viscosity 0.3-3 dL/g consist of [p-C6H4P(Ph)-p-C6H4R] (R = imide group Q; Ar = aromatic organic groups). Thus, 0.02 mol (p-NH2C6H4)2PPh was treated with 0.02 mol pyromellitic dianhydride and then with Ac2O and pyridine to give a polyimide with viscosity 0.55 dL/g, which was dissolved in AcNMe2, casted on a glass sheet, and dried to give a polyimide film showing 10%-weight degradation at 533° in N and at 511° in air.

IC ICM C08G073-10
ICS C08G079-02

CC 35-5 (Chemistry of Synthetic High Polymers)

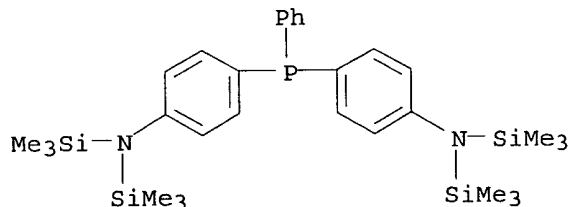
ST polyimide arom heat resistance; phenyl phosphine arom polyimide film; pyromellitic anhydride aminophenylphosphine copolymer polyimide

IT 149416-13-7P
RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent) (preparation and reaction of, for polyimides)

IT 149416-13-7P
RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent) (preparation and reaction of, for polyimides)

RN 149416-13-7 HCAPLUS

CN Silanamine, N,N'-[(phenylphosphinidene)di-4,1-phenylene]bis[1,1,1-trimethyl-N-(trimethylsilyl)- (9CI) (CA INDEX NAME)



L58 ANSWER 30 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1991:681283 HCAPLUS

DOCUMENT NUMBER: 115:281283

TITLE: Manufacture of metal-coordinating organic silicon polymers

INVENTOR(S): Sakata, Kanji; Okizaki, Akio; Kunitake, Toyoki

PATENT ASSIGNEE(S): Research Development Corp. of Japan, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 03170529	A2	19910724	JP 1989-309926	19891129
JP 2795379	B2	19980910		

PRIORITY APPLN. INFO.: JP 1989-309926 19891129

AB Title polymers useful for absorption, separation, and concentration of metal ions are

manufactured by coordinating $R_1nR_2mSi(OR)_4-n-m$ (R_1 = organic group containing metal

ion coordinatable group; R_2 = organic group without metal ion coordinatable group; $m = 0-2$; $n = 1-3$) with metal ions, hydrolyzing and polycondensing the resulting metal ion-coordinated alkoxysilanes, and removing the metal ions. Thus, 10 parts $NH_2(CH_2)_3SiOMe_3$ (I) was treated with 35 parts $CuCl_2$ in MeOH, polymerized in the presence of NH_4OH at 150° for 3 h, and immersed in 1N HCl to give white polymer which showed Cu absorption 20% in 1% $CuCl_2$ for 24 h, vs. <0.01 when I was hydrolytically polymerized without $CuCl_2$.

IC ICM C08G077-26

ICS B01J045-00; C08G077-14; C08G077-30

CC 37-3 (Plastics Manufacture and Processing)

IT 1760-24-3DP, N-(β -Aminoethyl)- γ -aminopropyltrimethoxysilane,

metal complexes 7447-39-4DP, Copper chloride ($CuCl_2$),

complexes with alkoxysilanes 7705-08-0DP, Iron chloride ($FeCl_3$),

complexes with alkoxysilanes 13822-56-5DP, γ -

Aminopropyltrimethoxysilane, metal complexes 18586-39-5DP,

2-(Diphenylphosphino)ethyltriethoxysilane, metal complexes 64176-82-5DP,

Sodium palladium chloride, complexes with alkoxysilanes

RL: PREP (Preparation)

(manufacture and hydrolytic polymerization)

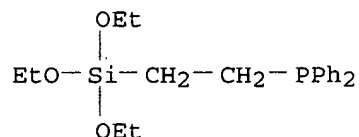
IT 18586-39-5DP, 2-(Diphenylphosphino)ethyltriethoxysilane, metal complexes

RL: PREP (Preparation)

(manufacture and hydrolytic polymerization)

RN 18586-39-5 HCAPLUS

CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



L58 ANSWER 31 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1991:525579 HCAPLUS

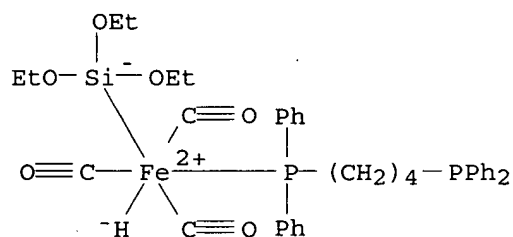
DOCUMENT NUMBER: 115:125579

TITLE: Synthesis and reactivity of phosphine-substituted hydrido silyl complexes mer-[$FeH(SiR_3)(CO)_3\{Ph_2P(CH_2)_nPPH_2\}$] ($n = 1$ or 4), mer-[$FeH\{Si(OMe)_3\}(CO)_3(PPh_2H)\}$] and mer-[$FeH\{Si(OMe)_3\}(CO)_3\{Ph_2PCH_2C(O)Ph\}\}$]. Synthesis of bimetallic complexes and crystal structure of

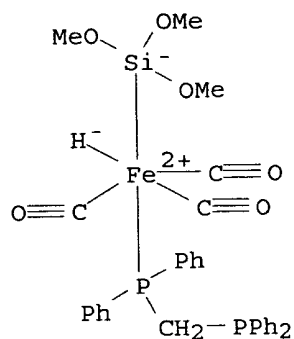
mer-[(Ph₃P)Cu(μ-dppm)Fe{Si(OMe)₃}(CO)₃]
 AUTHOR(S): Braunstein, Pierre; Knorr, Michael; Schubert, Ulrich;
 Lanfranchi, Maurizio; Tiripicchio, Antonio
 CORPORATE SOURCE: Lab. Chim. Coord., Univ. Louis Pasteur, Strasbourg,
 F-67070, Fr.
 SOURCE: Journal of the Chemical Society, Dalton Transactions:
 Inorganic Chemistry (1972-1999) (1991), (6), 1507-14
 CODEN: JCDBTBI; ISSN: 0300-9246
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB The reaction of cis-[FeH{Si(OMe)₃}(CO)₄] (I) with Ph₂PCH₂PPh₂ (dppm) in a
 1:1 ratio afforded mer-[FeH{Si(OMe)₃}(CO)₃(dppm-P)]. mer-
 [FeH{Si(OEt)₃}(CO)₃(dppm-P)] was obtained similarly. The reaction of
 [FeH(SiPh₃)(CO)₄] with Ph₂P(CH₂)₄PPh₂ (dppb) afforded mer-
 [FeH(SiPh₃)(CO)₃(dppb-P)] and that of I with (Ph₂P)C(CH₃)₂ (vdpp) afforded
 under analogous conditions cis-[FeH{Si(OMe)₃}(CO)₂(vdpp-P,P')]. Reaction
 of I with Ph₂PCH₂C(O)Ph yielded mer-[FeH{Si(OMe)₃}(CO)₃{Ph₂PCH₂C(O)Ph}]
 and with PPh₂H, mer-[FeH{Si(OMe)₃}(CO)₃(PPh₂H)] was obtained.
 K[Fe(SiR₃)(CO)₃(PPh₂X)] (II; R = OMe, OEt, X = CH₂PPh₂; R = Ph, X =
 (CH₂)₄PPh₂; R = OMe, X = CH₂C(O)Ph) were generated from the corresponding
 hydrido complexes by deprotonation with excess of KH in THF. They were
 used to prepare metal-metal bonded mer-[LM(μ-dppm)Fe{Si(OMe)₃}(CO)₃]
 (III; M = Cu, L = PPh₃, MeCN; M = Ag, L = AsPh₃, PPh₃; M = Au, L = PPh₃).
 III (M = Ag, L = AsPh₃) dissocs. AsPh₃ in solution with formation of
 mer-[Ag(μ-dppm)Fe{(MeO)Si(OMe)₂}(CO)₃] which contains an unusual
 alkoxysilyl bridge resulting in a AgFeSiO four-membered ring. This very
 labile complex was also obtained from the reaction of II (R = OMe, X =
 CH₂PPh₂) with [Ag(MeCN)₂]NO₃. For comparative purposes,
 mer-[(Ph₃P)AuFe{Si(OMe)₃}(CO)₃(PPh₃)] was prepared. All complexes were
 characterized by elemental anal. and spectroscopic (IR and ¹H and ³¹P-{¹H}
 NMR) methods. The crystal structure of III (M = Cu, L = PPh₃) has been
 determined by x-ray diffraction: monoclinic, space group P2₁/c, a 11.542(5), b
 18.567(7), c 21.830(7) Å, β 94.67(2)°, Z = 4. The Cu atom
 is trigonally coordinated by two P atoms from the dppm and PPh₃ ligands
 and by the Fe atom [Fe-Cu = 2.540(2) Å]. The Fe atom is in an
 octahedral arrangement determined by three C atoms from carbonyl groups, a P
 atom of the bridging dppm ligand and by the Si atom of the Si(OMe)₃ group.
 CC 78-7 (Inorganic Chemicals and Reactions)
 Section cross-reference(s): 75
 ST crystal structure **copper** iron diphosphine methoxysilyl;
 structure **copper** iron diphosphine methoxysilyl dinuclear; iron
 hydrido silyl phosphine complex; **copper** iron carbonyl
 diphosphine silyl dinuclear; silver iron carbonyl diphosphine silyl
 dinuclear; gold iron carbonyl diphosphine silyl dinuclear; Group IB iron
 carbonyl diphosphine silyl
 IT Crystal structure
 Molecular structure
 (of **copper** iron carbonyl diphosphine methoxysilyl complex)
 IT Bond
 (**copper**-gold, in carbonyl trimethoxysilyl diphosphine
 dinuclear complex)
 IT Bond
 (**copper**-iron, in carbonyl trimethoxysilyl diphosphine
 dinuclear complex)
 IT Bond
 (**copper**-silver, in carbonyl trimethoxysilyl diphosphine
 dinuclear complex)
 IT 7440-22-4, Silver, properties 7440-50-8, **Copper**, properties
 7440-57-5, Gold, properties
 RL: PRP (Properties)

(bond of, with iron in carbonyl trimethoxysilyl diphosphine dinuclear complex)

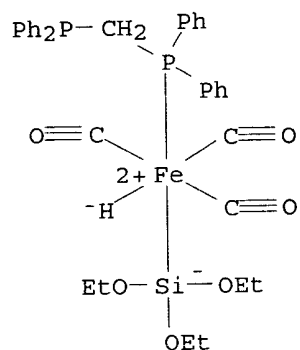
- IT **135745-65-2P** 135745-67-4P
 RL: PRP (Properties); FORM (Formation, nonpreparative); PREP (Preparation)
 (formation and NMR of)
- IT **123641-14-5P** **135745-64-1P** 135745-80-1P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (preparation and deprotonation of)
- IT **123674-03-3P**
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (preparation and reaction of, with Group IB complexes of acetonitrile or
 arsines or phosphines)
- IT 135745-66-3P 135745-68-5P **135745-70-9P** 135745-71-0P
 135745-72-1P 135745-81-2P **135745-82-3P** 135745-84-5P
 135745-85-6P 135745-86-7P 135745-87-8P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
- IT 10290-99-0 14243-64-2 15418-29-8, Tetraacetonitrilecopper(1+)
 tetrafluoroborate 106678-35-7, Bis(triphenylphosphine)copper
 (1+) nitrate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with iron carbonyl diphosphine trimethoxysilyl anion)
- IT **135745-65-2P**
 RL: PRP (Properties); FORM (Formation, nonpreparative); PREP (Preparation)
 (formation and NMR of)
- RN 135745-65-2 HCAPLUS
- CN Iron, [1,4-butanediylbis[diphenylphosphine]-P]tricarbonylhydro(triethoxysilyl)-, (OC-6-24)- (9CI) (CA INDEX NAME)



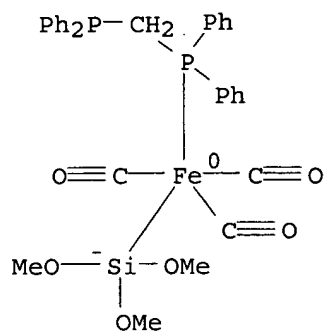
- IT **123641-14-5P** **135745-64-1P**
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (preparation and deprotonation of)
- RN 123641-14-5 HCAPLUS
- CN Iron, tricarbonylhydro[methylenebis[diphenylphosphine-
 κP]](trimethoxysilyl)-, (OC-6-24)- (9CI) (CA INDEX NAME)



RN 135745-64-1 HCAPLUS
 CN Iron, tricarbonylhydro[methylenebis[diphenylphosphine]-P] (triethoxysilyl)-
 , (OC-6-24)- (9CI) (CA INDEX NAME)



IT 123674-03-3P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (preparation and reaction of, with Group IB complexes of acetonitrile or
 arsines or phosphines)
 RN 123674-03-3 HCAPLUS
 CN Ferrate(1-), tricarbonyl[((diphenylphosphino)methyl)diphenylphosphine-
 κP] (trimethoxysilyl)-, potassium, (TB-5-12)- (9CI) (CA INDEX NAME)



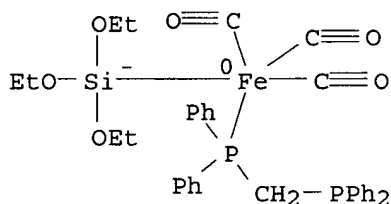
● K⁺

IT 135745-70-9P 135745-82-3P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 135745-70-9 HCAPLUS

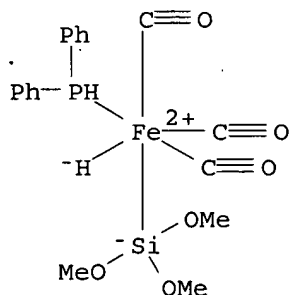
CN Ferrate(1-), tricarbonyl[methylenebis[diphenylphosphine]-
P](triethoxysilyl)-, potassium, (TB-5-12)- (9CI) (CA INDEX NAME)



● K⁺

RN 135745-82-3 HCAPLUS

CN Iron, tricarbonyl(diphenylphosphine)hydro(trimethoxysilyl)- (9CI) (CA
INDEX NAME)



L58 ANSWER 32 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1991:520755 HCAPLUS

DOCUMENT NUMBER: 115:120755

TITLE: Chemically bonded chelates as selective complexing sorbents for gas chromatography. I. Alkenes

AUTHOR(S): Wasiak, W.

CORPORATE SOURCE: Fac. Chem., A. Mickiewicz Univ., Poznan, 60-780, Pol.

SOURCE: Journal of Chromatography (1991), 547(1-2), 259-68

CODEN: JOCRAM; ISSN: 0021-9673

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Column packings containing β -diketonate chelates of Cu(II) and Ni(II) chemical bonded with silica surfaces can be used to sep. nucleophilic species by metal complex formation. These sorbents are capable of selectively retaining unsatd. linear and cyclic hydrocarbons. The packing properties depend on both the metal and the ligand. The influence of electronic effects on the retention of donors is discussed.

CC 66-3 (Surface Chemistry and Colloids)

Section cross-reference(s): 78, 80

ST gas chromatog sorbent diketonate chelate; unsatd hydrocarbon sepn gas chromatog; **copper** diketonate silica surface bonded phase; nickel diketonate silica bonded phase chromatog; nucleophile sepn chromatog surface bonded chelate

IT 3264-82-2D, Bis(acetylacetonato)nickel, reaction products with phosphonated silica 13395-16-9D, Bis(acetylacetonato)**copper**, reaction products with phosphonated silica

RL: PRP (Properties)

(gas chromatog. sorbents, for unsatd. hydrocarbon saturation)

IT 135868-17-6D, reaction products with silica gel

RL: PRP (Properties)

(surface, in gas chromatog. sorbent preparation)

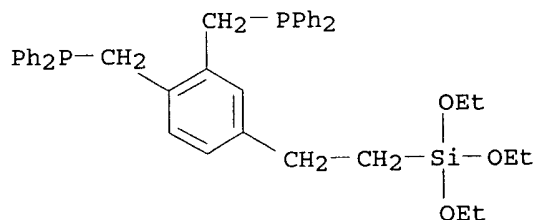
IT 135868-17-6D, reaction products with silica gel

RL: PRP (Properties)

(surface, in gas chromatog. sorbent preparation)

RN 135868-17-6 HCAPLUS

CN Phosphine, [[4-[2-(triethoxysilyl)ethyl]-1,2-phenylene]bis(methylene)]bis[diphenyl- (9CI) (CA INDEX NAME)]



L58 ANSWER 33 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1991:177104 HCAPLUS

DOCUMENT NUMBER: 114:177104

TITLE: Occurrence of an η^2 - μ^2 -SiO bridge in bimetallic complexes. Synthesis of dppm-stabilized Si-Fe-M (M = Rh, Cu, Hg) complexes and crystal structure of $\text{Fe}(\text{CO})_3\{\text{Si}(\text{OMe})_3\}(\mu\text{-dppm})\text{Cu}(\text{AsPh}_3)$ (dppm = $\text{Ph}_2\text{PCH}_2\text{PPh}_2$)

AUTHOR(S): Braunstein, Pierre; Knorr, Michael; Villarroja, B. Eva; Fischer, Jean

CORPORATE SOURCE: Lab. Chim. Coord., Univ. Louis Pasteur, Strasbourg, F-67070, Fr.

SOURCE: New Journal of Chemistry (1990), 14(6-7), 583-7
CODEN: NJCHE5; ISSN: 1144-0546

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Treatment of $K[Fe(CO)_3(\eta^1\text{-dppm})\{Si(OMe)_3\}]$ (I; dppm = $Ph_2PCH_2PPh_2$) with $[Rh_2(CO)_4Cl_2]$ in THF gave $[Fe(CO)_3\{Si(OMe)_2(\mu\text{-OMe})\}(\mu\text{-dppm})Rh(CO)]$. The Fe-Rh bond is supported by the dppm ligand and an $\eta^2\text{-}\mu^2\text{-SiO}$ bridge formed by the siloxy ligand. This latter bridge is rigid on the 1H NMR time scale but its rigidity is decreased in $[Fe(CO)_3\{Si(OMe)_2(\mu\text{-OMe})\}(\mu\text{-dppm})Rh(PPh_3)]$ owing to the coordination to Rh by the better donor ligand PPh_3 . Treatment of I with $HgCl_2$ or $[Cu(AsPh_3)_3]NO_3$ in THF afforded $[Fe(CO)_3\{Si(OMe)_3\}(\mu\text{-dppm})HgCl]$ and $[Fe(CO)_3\{Si(OMe)_3\}(\mu\text{-dppm})Cu(AsPh_3)]$ (II), resp. IR, 1H , and $^{31}P\{^1H\}$ NMR data are given and discussed. The mol. structure of II was determined by x-ray diffraction: monoclinic, space group $P2_1/c$, a 11.582(1), b 18.650(1), c 21.919(2) Å, β 94.24(1)°, Z = 4, R = 0.037, R_w = 0.051. The Fe-Cu distance of 2.497(2) Å indicates a metal-metal bond. The Cu atom is further ligated by a P atom of the dppm ligand and the $AsPh_3$ ligand and makes short contacts (2.38(1) and 2.51(1) Å) with the C atoms to 2 CO groups bound to Fe. The Fe atom is further ligated by a terminal CO, a P atom of the dppm ligand, and the $Si(OMe)_3$ ligand.

CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75

ST crystal structure iron **copper** siloxo dinuclear; structure iron **copper** phosphine siloxo dinuclear; **copper** iron siloxo carbonyl phosphine dinuclear; rhodium iron siloxo carbonyl phosphine dinuclear; mercury iron siloxo carbonyl phosphine dinuclear; iron siloxo carbonyl phosphine heterodinuclear

IT Crystal structure
Molecular structure
(of **copper** iron carbonyl siloxo phosphine dinuclear complex)

IT Nuclear magnetic resonance
(of iron carbonyl phosphine siloxo dinuclear complexes with **copper** or mercury or rhodium, multinuclear)

IT Bond
(**copper**-iron, in carbonyl phosphine siloxo dinuclear complex)

IT 7439-97-6, Mercury, properties 7440-16-6, Rhodium, properties 7440-50-8, **Copper**, properties
RL: PRP (Properties)
(bond of, with iron in carbonyl phosphine siloxo dinuclear complex)

IT 7439-89-6, Iron, properties
RL: PRP (Properties)
(bonds of, with **copper** or mercury or rhodium in carbonyl siloxo phosphine dinuclear complexes)

IT 14523-22-9, Tetracarbonyldichlorodirrhodium 133336-79-5, Tris(triphenylarsine)**copper**(1+) mononitrate
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with iron carbonyl trimethoxysilyl complex)

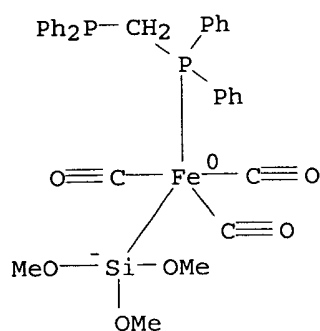
IT 123674-03-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactions of, with mercuric chloride or **copper** triphenylarsine complex or rhodium chloro carbonyl dimer)

IT 123674-03-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactions of, with mercuric chloride or **copper** triphenylarsine complex or rhodium chloro carbonyl dimer)

RN 123674-03-3 HCAPLUS

CN Ferrate(1-), tricarbonyl[[$(diphenylphosphino)methyl$]diphenylphosphine-

κP] (trimethoxysilyl)-, potassium, (TB-5-12)- (9CI) (CA INDEX NAME)



● K⁺

L58 ANSWER 34 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1989:204850 HCAPLUS
 DOCUMENT NUMBER: 110:204850
 TITLE: Method of obtaining a packing for gas chromatography
 INVENTOR(S): Wasiak, Wieslaw; Urbaniak, Wlodzimierz; Szczepaniak, Walenty
 PATENT ASSIGNEE(S): Uniwersytet im. Adama Mickiewicza, Pol.
 SOURCE: Pol., 13 pp. Abstracted and indexed from the unexamined application.
 CODEN: POXXA7
 DOCUMENT TYPE: Patent
 LANGUAGE: Polish
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PL 140532	B1	19870530	PL 1984-246727	19840315
PRIORITY APPLN. INFO.:			PL 1984-246727	19840315.

AB Gas chromatog. packing YLMX, where Y is the support with free OH- groups, L is 1-triethoxysilyl-2-(p- or m-((diphenylphosphino)methyl)phenyl) ethane (I) and MX is a transition metal salt, is prepared by subjecting the dehydrated support with free OH- groups to a condensation reaction with I in nonpolar aprotic solvent, removal of excess I, deactivation of unreacted OH- groups, treatment of the modified support with a 10-30 % solution of a transition metal salt in an organic solvent chemical inert with respect to the reagents, and removal of the unreacted transition metal salt. Thus I was combined with Parasil C, and complexed with CuCl₂.

IC ICM B01J020-26
 ICS C07F009-50

CC 80-4 (Organic Analytical Chemistry)

IT Chromatography, gas
 (packing, from chemical balanced triethoxysilyl(((diphenylphosphine)methyl)phenyl)ethane and complex copper)

IT 7440-50-8D, Copper, complexes with reaction products of silica and triethoxysilyl(((diphenylphosphinyl)methyl)phenyl)ethane 7631-86-9D, Silica, reaction products with triethoxysilyl(((diphenyl)phosphinyl)methyl)phenyl)ethane, copper complexes 120512-82-5D, reaction

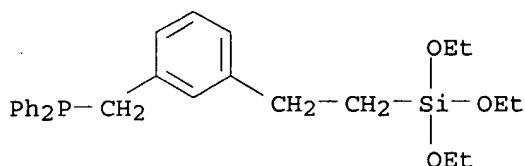
products with silica, **copper** complexes 120532-05-0D,
 reaction products with silica, **copper** complexes
 RL: ANST (Analytical study)
 (gas chromatog. packing)

IT 120512-82-5D, reaction products with silica, **copper**
 complexes 120532-05-0D, reaction products with silica,
copper complexes

RL: ANST (Analytical study)
 (gas chromatog. packing)

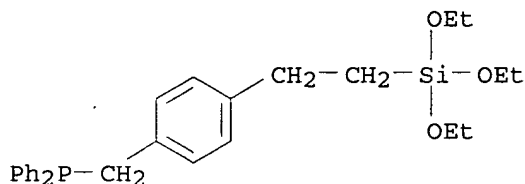
RN 120512-82-5 HCAPLUS

CN Phosphine, diphenyl[[3-[2-(triethoxysilyl)ethyl]phenyl]methyl]- (9CI) (CA
 INDEX NAME)



RN 120532-05-0 HCAPLUS

CN Phosphine, diphenyl[[4-[2-(triethoxysilyl)ethyl]phenyl]methyl]- (9CI) (CA
 INDEX NAME)



L58 ANSWER 35 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1989:146843 HCAPLUS

DOCUMENT NUMBER: 110:146843

TITLE: Optically coupled gas sensor with a photoluminescent
semiconductor

INVENTOR(S): Ellis, Arthur B.; Meyer, Gerald J.; Lisensky, George
 C.

PATENT ASSIGNEE(S): Minnesota Mining and Manufacturing Co., USA

SOURCE: Eur. Pat. Appl., 8 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 291149	A2	19881117	EP 1988-302092	19880310
EP 291149	A3	19900321		
R: DE, FR, GB, IT, NL				
JP 64001938	A2	19890106	JP 1988-75811	19880329
PRIORITY APPLN. INFO.:			US 1987-32300	A 19870330
AB A sensor is described, comprising (1) a photoluminescent				

semiconductor having a reacted material bonded to a radiation-emitting surface of the **semiconductor**, the reacted material being further capable of undergoing an oxidative addition/reductive elimination reaction with volatile compds. to produce a product bonded to the radiation-emitting surface, the reacted material having an elec. charge distribution which is vertical with respect to the radiation-emitting surface, and the product altering the vertical charge distribution with respect to the radiation-emitting surface, the charge distribution being capable of altering the elec. field in the **semiconductor**, (2) a source of actinic radiation that can impinge on the radiation-emitting surface of the **semiconductor**, and (3) a means for detecting changes in the characteristics of the radiation emitted from the radiation-emitting surface. The **semiconductor** comprises a solid-state solution of at least 2 elements selected from the group consisting of (a) Cd, Se, and S; (b) Zn, Se, and S; (c) Cd, Zn, and Se; (d) Cd, Zn, and S; (e) Cd and Se; (f) Cd and S; (g) Zn and Se doped with Al; (h) Ga and As; (i) Ga, As, and P; (j) Ga and P; and (k) In and P. The **semiconductor** has a coating of the reactive material containing Vaska's complex or a derivative thereof that can undergo oxidative addition/reductive elimination reactions. The **semiconductor** has a coating of the reactive material containing a d8 complex of Fe⁰, Ru⁰, Co⁺¹, Rh⁺¹, Ir⁺¹, Ni⁺², Pd⁺², Pt⁺² or their congeners. The presence of certain chems. on the emitting surface of the surface-derivatized photoluminescent **semiconductor** alters the characteristics of radiation emitted from that surface. This alteration is used to indicate the presence of those chems. in the environment.

- IC ICM G01N021-76
 CC 79-2 (Inorganic Analytical Chemistry)
 ST oxygen photoluminescent **semiconductor** gas sensor; hydrogen photoluminescent **semiconductor** gas sensor; ammonia photoluminescent **semiconductor** gas sensor; water vapor photoluminescent **semiconductor** sensor; methyl iodide photoluminescent **semiconductor** sensor; sulfur dioxide photoluminescent **semiconductor** sensor
 IT **Semiconductor** devices
 (photoluminescent gas sensor containing)
 IT Gas analysis
 (sensor for, photoluminescent **semiconductor**)
 IT 74-88-4, Methyl iodide, analysis 1333-74-0, Hydrogen, analysis 7446-09-5, Sulfur dioxide, analysis 7664-41-7, Ammonia, analysis 7732-18-5, Water, analysis 7782-44-7, Oxygen, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (determination of, optically coupled gas sensor with photoluminescent **semiconductor** for)
 IT 7439-88-5D, Iridium, complexes 7439-89-6D, Iron, complexes 7440-02-0D, Nickel, complexes 7440-05-3D, Palladium, complexes 7440-06-4D, Platinum, complexes 7440-16-6D, Rhodium, complexes 7440-18-8D, Ruthenium, complexes 7440-48-4D, Cobalt, complexes
 RL: ANST (Analytical study)
 (in photoluminescent **semiconductor** gas sensor)
 IT 1306-23-6D, Cadmium sulfide, reaction product with diphenylphosphinoethyltriethoxysilane and Vaska's complex 1306-24-7D, Cadmium selenide (CdSe), reaction product with diphenylphosphinoethyltriethoxysilane and Vaska's complex 4145-77-1D, 2-(Diphenylphosphino)ethyltrichlorosilane, reaction product with tellurium-doped gallium arsenide and Vaska's complex 15318-31-7D, Vaska's complex, reaction product with tellurium-doped gallium arsenide and diphenylphosphinoethyltriethoxysilane 18586-39-5D, 2-(Diphenylphosphino)-ethyltriethoxysilane, reaction product with tellurium-doped gallium arsenide and Vaska's complex

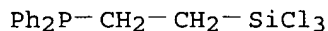
106957-86-2D, Gallium arsenide phosphide (GaAs_{0.7}P_{0.3}), reaction product with diphenylphosphinoethyltriethoxysilane and Vaska's complex
 107103-13-9D, Cadmium selenide sulfide (CdSe_{0.1}S_{0.9}), reaction product with diphenylphosphinoethyltriethoxysilane and Vaska's complex
 RL: ANST (Analytical study)

(photoluminescent **semiconductor** gas sensor containing)
 IT 1303-00-0D, Gallium arsenide, reaction product with diphenylphosphinoethyltriethoxysilane and Vaska's complex
 RL: ANST (Analytical study)
 (photoluminescent **semiconductor** gas sensor containing tellurium-doped)

IT 4145-77-1D, 2-(Diphenylphosphino)ethyltrichlorosilane, reaction product with tellurium-doped gallium arsenide and Vaska's complex
 18586-39-5D, 2-(Diphenylphosphino)-ethyltriethoxysilane, reaction product with tellurium-doped gallium arsenide and Vaska's complex
 RL: ANST (Analytical study)
 (photoluminescent **semiconductor** gas sensor containing)

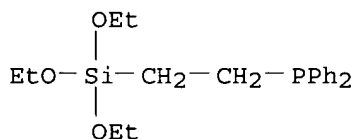
RN 4145-77-1 HCAPLUS

CN Phosphine, diphenyl[2-(trichlorosilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 18586-39-5 HCAPLUS

CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



L58 ANSWER 36 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1989:121893 HCAPLUS

DOCUMENT NUMBER: 110:121893

TITLE: Preparation and characterization of mixed monolayer with controllable composition

AUTHOR(S): Tao, Yu Tai; Huang, Dao Yang

CORPORATE SOURCE: Inst. Chem., Acad. Sin., Taipei, Taiwan

SOURCE: Bulletin of the Institute of Chemistry, Academia Sinica (1988), 35, 23-30

CODEN: BICMAD; ISSN: 0366-0370

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Monomol. **films** containing various amount of functional groups were prepared by a mixed adsorption method which gives terminally functionalized silane/saturated silane-on-silica surfaces. Anchoring of metal carbonyls on such surfaces was also examined. The characterization was carried out by using attenuated total reflection FTIR and/or determining the characteristic wetting behavior.

CC 66-1 (Surface Chemistry and Colloids)

ST adsorbed monolayer **film** mixed prepn; silica silanized surface **film**; carbonyl metal adsorbed silanized silica

IT 112-04-9D, Octadecyltrichlorosilane, reaction products with silica

13829-21-5D, Decyltrichlorosilane, reaction products with silica
 17963-29-0D, 10-Undecenyltrichlorosilane, reaction products with silica
119463-32-0D, (11-(Diphenylphosphino)undecyl)trichlorosilane,
 reaction products with silica
 RL: PRP (Properties)
 (surface mixed monolayers)
 IT **119463-32-0D**, (11-(Diphenylphosphino)undecyl)trichlorosilane,
 reaction products with silica
 RL: PRP (Properties)
 (surface mixed monolayers)
 RN 119463-32-0 HCAPLUS
 CN Phosphine, diphenyl[11-(trichlorosilyl)undecyl]- (9CI) (CA INDEX NAME)

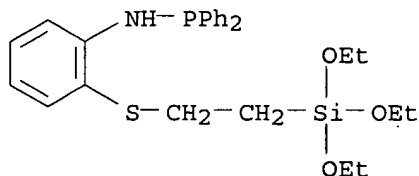
$\text{Cl}_3\text{Si}-(\text{CH}_2)_{11}-\text{PPh}_2$

L58 ANSWER 37 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1988:67892 HCAPLUS
 DOCUMENT NUMBER: 108:67892
 TITLE: Silica-immobilized 2-[(2-(triethoxysilyl)ethyl)thio]ani
 line as a selective sorbent for the separation and
 preconcentration of palladium
 AUTHOR(S): Seshadri, Tarimala; Haupt, Hans Juergen
 CORPORATE SOURCE: Dep. Inorg. Anal. Chem., Univ.-GH Paderborn,
 Paderborn, 4790, Fed. Rep. Ger.
 SOURCE: Analytical Chemistry (1988), 60(1), 47-52
 CODEN: ANCHAM; ISSN: 0003-2700
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 108:67892
 AB The silanes 2-[2-(triethoxysilyl)ethyl]thio]aniline (2-SNH₂) and
 [(2-(triethoxysilyl)ethyl)thio]benzene (S-Ph) and their Pd(II) complexes
 were synthesized and characterized by anal. and spectroscopic methods.
 Their Pd(II)-silane ligand stoichiometry was 1:1 and 1:2, resp. The
 silica-bound silanes SIL-2-SNH₂ and SIL-S-Ph (silane capacity both 0.88
 mmol/g) show a dynamic exchange capacity for Pd(II) of 0.64 and 0.36
 mmol/g, resp., which roughly corresponds to the expected values for the
 above metal-ligand stoichiometry. The silica ligand SIL-2-SNH₂ has column
 breakthrough capacities of 0.46 mmol Pd(II)/g and 0.040 mmol Pt(II)/g,
 resp. Studies of the separation of Pd(II) from Rh(III), Ir(III), and base
 metals (70-130 g/L) as well as preconcn. of Pd(II) from dilute aqueous solns.
 with a SIL-2-SNH₂ column are reported. A quant. elution of Pd(II) is
 effected with acidic 5% thiourea solution
 CC 79-3 (Inorganic Analytical Chemistry)
 Section cross-reference(s): 25, 78
 IT 7439-88-5, Iridium, properties 7439-89-6, Iron, properties 7440-02-0,
 Nickel, properties 7440-04-2, Osmium, properties 7440-06-4, Platinum,
 properties 7440-16-6, Rhodium, properties 7440-18-8, Ruthenium,
 properties 7440-22-4, Silver, properties 7440-48-4, Cobalt, properties
 7440-50-8, Copper, properties 7440-57-5, Gold, properties
 RL: PRP (Properties)
 (exchange capacity for, on silica gel-immobilized
 [(triethoxysilyl)ethyl]thio]aniline)
 IT **111237-53-7P** 111237-54-8P 111237-55-9P
 RL: PREP (Preparation)
 (preparation of)
 IT **111237-53-7P**
 RL: PREP (Preparation)

(preparation of)

RN 111237-53-7 HCAPLUS

CN Phosphinous amide, P,P-diphenyl-N-[2-[[2-(triethoxysilyl)ethyl]thio]phenyl]- (9CI) (CA INDEX NAME)



L58 ANSWER 38 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1987:526251 HCAPLUS

DOCUMENT NUMBER: 107:126251

TITLE: Investigation of the interaction of olefin-bonded transition metal complexes by gas chromatography. II. Phosphine complexes of **copper**(II)

AUTHOR(S): Wasiak, W.

CORPORATE SOURCE: Fac. Chem., A. Mickiewicz Univ., Poznan, 60-780, Pol.

SOURCE: Chromatographia (1986), 22(1-6), 147-52

CODEN: CHRGB7; ISSN: 0009-5893

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Gas chromatog. packings consisting of chemical-bonded diphenylphosphine complexes with CuCl₂ and CuBr₂ were synthesized and their retention parameters determined. The packings are capable of specific interactions with electron-donating compds. and are characterized by particularly high selectivity in relation to cis and trans isomers allowing their complete separation.

CC 80-4 (Organic Analytical Chemistry)

ST gas chromatog packing chem bonded; **copper** diphenylphosphine complex bonded packing; olefin gas chromatog packing

IT Alkenes, analysis

Aromatic hydrocarbons, analysis

RL: ANT (Analyte); ANST (Analytical study)

(gas chromatog. of, **copper** diphenylphosphine complex-bonded silica stationary phase for)

IT Chromatography, gas

(stationary phases, **copper** diphenylphosphine complex-bonded silica as)

IT 7447-39-4D, **Copper** dichloride, reaction products with diphenylphosphino-bonded silica 7631-86-9D, **copper** diphenylphosphine complex-bonded 7789-45-9D, **Copper** dibromide, reaction products with diphenylphosphino-bonded silica 104141-78-8D, reaction products with silica and **copper** dihalides

RL: ANST (Analytical study)

(as stationary phase, for gas chromatog.)

IT 71-43-2, analysis 78-79-5, 2-Methyl-1,3-butadiene, analysis 95-47-6, o-Xylene, analysis 96-14-0, 3-Methylpentane 98-82-8, Cumene 100-41-4, Ethylbenzene, analysis 103-65-1, Propylbenzene 106-42-3, p-Xylene, analysis 107-83-5, 2-Methylpentane 108-38-3, m-Xylene, analysis 108-86-1, Bromobenzene, analysis 108-88-3, Toluene, analysis 108-90-7, Chlorobenzene, analysis 109-67-1 110-82-7, analysis 110-83-8, analysis 462-06-6, Fluorobenzene 558-37-2, 3,3-Dimethyl-1-butene 563-78-0, 2,3-Dimethyl-1-butene 563-79-1,

2,3-Dimethyl-2-butene 592-41-6, analysis 592-45-0 592-46-1
 592-48-3 592-49-4 592-57-4 592-76-7 616-12-6, trans-3-Methyl-2-
 pentene 625-27-4, 2-Methyl-2-pentene 627-19-0 627-20-3,
 cis-2-Pentene 628-41-1 628-71-7, 2,3-Dimethylbutane 646-04-8,
 trans-2-Pentene 674-76-0, trans-4-Methyl-2-pentene 691-37-2,
 4-Methyl-1-pentene 691-38-3, cis-4-Methyl-2-pentene 763-29-1,
 2-Methyl-1-pentene 922-62-3 2235-12-3 4050-45-7, trans-2-Hexene
 6443-92-1, cis-2-Heptene 7642-10-6, cis-3-Heptene 7688-21-3,
 cis-2-Hexene 14686-13-6, trans-2-Heptene 14686-14-7, trans-3-Heptene
 RL: ANT (Analyte); ANST (Analytical study)

(gas chromatog. of, on **copper** diphenylphosphine
 complex-bonded silica stationary phase, capacity factor and retention
 index in)

IT 7642-04-8, cis-2,-Octene 13389-42-9, trans-2-Octene

RL: ANST (Analytical study)

(separation of, from trans isomer, **copper** diphenylphosphine
 complex-bonded silica stationary phase for gas chromatog.)

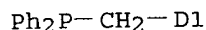
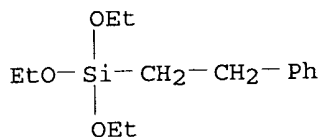
IT 104141-78-8D, reaction products with silica and **copper**
 dihalides

RL: ANST (Analytical study)

(as stationary phase, for gas chromatog.)

RN 104141-78-8 HCAPLUS

CN Phosphine, diphenyl[[3(or 4)-[2-(triethoxysilyl)ethyl]phenyl]methyl]-
 (9CI) (CA INDEX NAME)



L58 ANSWER 39 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1986:564201 HCAPLUS

DOCUMENT NUMBER: 105:164201

TITLE: Specific interactions of alkenes with chemically
 bonded phosphine-**copper** complexes

AUTHOR(S): Wasiak, W.; Szczepaniak, W.

CORPORATE SOURCE: Fac. Chem., A. Mickiewicz Univ., Poznan, 60-780, Pol.

SOURCE: Journal of Chromatography (1986), 364, 259-65

CODEN: JOCRAM; ISSN: 0021-9673

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Transition metal cations are able to interact specifically with unsatd.
 hydrocarbons and compds. containing heteroatoms. Linear and branched olefins,
 as well as mono- and polysubstituted chloro derivs. of alkanes and
 alkenes, were used as adsorbates to investigate the influence of mol.
 structure on the extent of specific interactions with packings containing
copper chloride and **copper** bromide, bonded to the silica
 surface (Porasil C). The salts were bonded through 1-triethoxy-silyl-2-
 (p,m-diphenylphosphinemethylphenyl)ethane.

CC 80-4 (Organic Analytical Chemistry)

ST gas chromatog chem bonded phase; stationary phase bonded gas chromatog;
copper phosphine complex phase chromatog; alkene gas chromatog

bonded phase; chloroalkane gas chromatog bonded phase; chloroalkane gas chromatog bonded phase

IT 7447-39-4D, reaction products with Porasil C 7789-45-9D, reaction products with Porasil C 57460-15-8D, reaction products with **copper** halides 104141-78-8D, reaction products with Porasil C

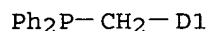
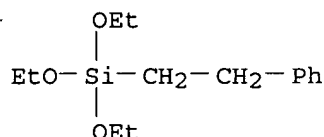
RL: ANST (Analytical study)
(as stationary phase, for gas chromatog. of alkenes and chloroalkanes and chloroalkenes)

IT 104141-78-8D, reaction products with Porasil C

RL: ANST (Analytical study)
(as stationary phase, for gas chromatog. of alkenes and chloroalkanes and chloroalkenes)

RN 104141-78-8 HCAPLUS

CN Phosphine, diphenyl[[3(or 4)-[2-(triethoxysilyl)ethyl]phenyl]methyl]-(9CI) (CA INDEX NAME)



L58 ANSWER 40 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1985:406483 HCAPLUS

DOCUMENT NUMBER: 103:6483

TITLE: Gas chromatographic study on interactions of olefins with chemically bonded transition metal complexes

AUTHOR(S): Wasiak, Wieslaw

CORPORATE SOURCE: Wydzial Chem., Uniw. A. Mickiewicza, Poznan, 60-780, Pol.

SOURCE: Chemia Analityczna (Warsaw, Poland) (1984), 29(2), 211-20

CODEN: CANWAJ; ISSN: 0009-2223

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The packings Si:Si(OEt)(CH₂)₂PPh₂.MCl₂ (M = Ni, Cu) were prepared from the reaction of SiOH groups on silica surface with (EtO)₃Si(CH₂)₂PPh₂ and MCl₂; the complex is able to bind an addnl. ligand e.g., olefins. Lability of such complexes is a condition for chromatog. separation of alkenes. The columns packed with the bonded diphenylphosphine complexes were used for gas-chromatog. separation of mixts. of alkanes and alkenes, styrene derivs. ketones, and chloroalkanes.

CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 80

ST nickel phosphine silica supported; **copper** phosphine silica supported; silica supported nickel **copper**; chromatog nickel **copper** silica supported; alkane chromatog complex silica supported; alkene chromatog complex silica supported; styrene chromatog complex silica supported; ketone chromatog complex silica supported; chloroalkene chromatog complex silica supported; gas chromatog silica supported complex

IT Chromatography, gas

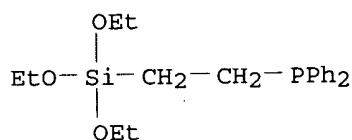
(nickel and copper complexes supported by silica for)

IT Silica gel, uses and miscellaneous
 RL: USES (Uses)
 (nickel and copper complexes supported by, for gas chromatog.)

IT 18586-39-5
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with metal chlorides and silica)

IT 18586-39-5
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with metal chlorides and silica)

RN 18586-39-5 HCAPLUS
 CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



L58 ANSWER 41 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1985:176545 HCAPLUS
 DOCUMENT NUMBER: 102:176545
 TITLE: Improving adhesion of resist to gold
 INVENTOR(S): Helbert, John N.
 PATENT ASSIGNEE(S): Motorola, Inc., USA
 SOURCE: U.S., 6 pp.
 CODEN: USXXAM

DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4497890	A	19850205	US 1983-483088	19830408
PRIORITY APPLN. INFO.:			US 1983-483088	19830408

AB A process is disclosed for improving the adhesion of a polymeric resist to a Au metalization surface. The process includes the use of a chelating silane as an adhesion promoter between the resist and the metalization surface. The improved resist adhesion is attributed to a complexation or chemisorption mechanism. The adhesion promoters contain moieties capable of acting as chelating or chemisorption sites on the mol. silane, thus creating layer-to-layer bonding with greater strength than that observed where just Van der Waals interactions occur to the Au surface atoms.

IC ICM H01L021-312
 INCL 430296000
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 76

ST resist gold adhesion improvement silane; semiconductor device
 gold resist adhesion; chelating silane adhesion promoter

IT Semiconductor devices
 (fabrication of, improvement of adhesion of polymeric resist to gold metalization surface for, using chelating silane)

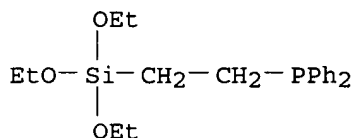
IT 18586-39-5

RL: USES (Uses)
 (adhesion promoting agent, between polymer resist and gold metalization surface, in fabrication of electronic devices)

IT 18586-39-5
 RL: USES (Uses)
 (adhesion promoting agent, between polymer resist and gold metalization surface, in fabrication of electronic devices)

RN 18586-39-5 HCAPLUS

CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



L58 ANSWER 42 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1985:79957 HCAPLUS

DOCUMENT NUMBER: 102:79957

TITLE: Epoxy resin potting compositions

PATENT ASSIGNEE(S): Toshiba Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
 CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 59174613	A2	19841003	JP 1983-48733	19830325
JP 04021691	B4	19920413		

PRIORITY APPLN. INFO.: JP 1983-48733 19830325

AB A moisture-resistant epoxy resin composition containing uniformly dispersed inorg.

filler, useful as a potting composition for a semiconductor device, contains RR1PZSiR33 (R,R1 = aryl or alkyl; Z = arylene or alkylene; R3 = alkoxy or halogen). Thus, a mixture of a cresol novolak-based epoxy resin (epoxy equivalent weight 220) 180, a novolak-base brominated epoxy resin (epoxy equivalent weight 290) 20, a novolak-type phenolic resin curing agent 92, 2-(diphenylphosphino)ethyltriethoxysilane (I) [18586-39-5] 7, a powdered quartz 700, Sb2O3 30, carnauba wax 4, and carbon black 4 parts was transfer-molded at 175° for 5 min and cured at 180° for 8 h to give an encapsulated MOS-type integrated circuit exhibiting number of defective samples containing corroded Al wire 3/100 after 320 h of steam treatment at 120°/2 atm and 10 V, compared with 100/100 for a composition not containing I.

IC C08G059-18; C08K005-54; C08L063-00

ICA H01L023-30

CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 76

IT 18586-39-5
 RL: USES (Uses)
 (epoxy resin potting compns. containing powdered quartz and, moisture-resistant)

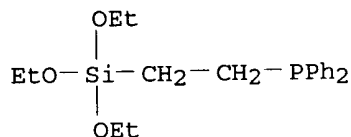
IT 18586-39-5

RL: USES (Uses)

(epoxy resin potting compns. containing powdered quartz and, moisture-resistant)

RN 18586-39-5 HCAPLUS

CN Phosphine, diphenyl[2-(triethoxysilyl)ethyl]- (7CI, 8CI, 9CI) (CA INDEX NAME)



L58 ANSWER 43 OF 43 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1984:68965 HCAPLUS

DOCUMENT NUMBER: 100:68965

TITLE: Polyphosphazene compounds

INVENTOR(S): Neilson, Robert H.; Wisian-Neilson, Patty J.

PATENT ASSIGNEE(S): USA

SOURCE: U.S., 5 pp. Cont. of U.S. Ser. No. 232,518 abandoned.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4412053	A	19831025	US 1982-341689	19820122
US 4523009	A	19850611	US 1984-636076	19840731
PRIORITY APPLN. INFO.:			US 1981-232518	A1 19810209
			US 1982-341689	A3 19820122
			US 1983-519040	A1 19830801

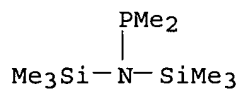
AB A polyphosphazene having a P-N backbone and side units bonded to the backbone by direct C-P bonds is prepared by treating a (disilylamino)phosphine with Br to give a P-bromo-N-silylphosphinimine, which was treated with trifluoroethanol (I) [75-89-8] in the presence of Et₃N to give a trifluoroethoxy substituted N-silylphosphinimine, which was heated at 150-250°. Thus, a mixture of 1.00 mol (Me₃Si)₂NH [999-97-3], 1.0 L Et₂O, and 1.00 mol BuLi was stirred at room temperature for 1 h. The mixture was cooled to -78° and 1.0 mol PCl₃ was added dropwise. After stirring at room temperature for 1 h, the mixture was cooled to

0°. MeMgBr [75-16-1] (2.0 mol) was added to the mixture over .apprx. 2 h at 0°. The mixture was warmed to room temperature and stirred for 3 h to give (Me₃Si)₂NPMe₂ (II) [63744-11-6]. A solution of 30-50 mmol II in 75 mL C₆H₆ was cooled to 0° and an equimolar amount of Br in 75 mL C₆H₆ was added dropwise to give Me₃SiN=P(Br)Me₂ (III) [73296-38-5]. I (20.4 mL) was added to a mixture of 59.6 g III, 400 mL C₆H₆, and 42 mL Et₃N at 0°. The mixture was stirred at room temperature for 18 h to give P-trifluoroethoxy-P,P-dimethyl-N-(trimethylsilyl)phosphinimine (IV) [73296-44-3]. IV (6.74 g) was heated at 190° for 40 h to give 2.02 g poly(dimethylphosphazene) [32007-38-8] as an opaque flexible film having glass temperature -40°.

IC C08G073-00

INCL 528030000

CC 35-7 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 38
IT 63744-11-6P
RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(preparation and bromination of, with bromine)
IT 63744-11-6P
RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(preparation and bromination of, with bromine)
RN 63744-11-6 HCAPLUS
CN Phosphinous amide, P,P-dimethyl-N,N-bis(trimethylsilyl)- (9CI) (CA INDEX
NAME)



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